MANDONS IN REPORTS COMPUTERWORD

Novell paves way for host LAN management

BY JIM NASH

PROVO, Utah - Novell, Inc. last week unveiled software di actively manage their NetWare ocal-area networks from main frames and minicomputers.

The company announced pment of NetWare for SAA Version 1.2, which a Novell spokesman said will enable an operator at an IBM NetView console to perform almost any function a LAN manager could

Where only certain system erts could be passed up to Net-View under the previous version of NetWare for SAA, now Net-View can actively load software ales and reset, boot, bring down and configure servers, the

spokesman said.

NetWare for SAA works with
NetWare Version 3.11 and
newer versions. Now shipping, it
also increases interoperability
between IBM Application Sys-



tem/400 and NetWare servers by providing full keyboard map-ping between IBM 5250 termi-nal sessions and AS/400 func-tions. Full 3270 terminal and

Widespread use Roughly 70% of Novell's cus-tomers have an AS/400 or IBM mainframe, according to Novell and industry analysts. Bob Gill. and industry analysis, Doo Oss., an analyst at Gartner Group, Inc., in Stamford, Conn., said that bet-ter support for AS/400s in gen-eral is needed. "There are Continued on page 14

Legent aims to acquire Goal

Combined entity expected to challenge CA for system software sales

BY JOHANNA AMBROSIO and THOMAS HOFFMAN

fy the combined entity's position as the No. 2 independent vendor in the mainframe systems soft-ware arena behind Computer

Associates International, Inc.

The newly minted Legent would be about one-third the size of CA, its largest independent competitor, with a product line ranging from automated operations and capacity management

Tale of the tape Legent and Goal would form a \$400 million entity

GOAL SYSTEMS ne/Profit: \$127.8M/\$8 2M

software to DB2 tools (see story page 16). In certain areas, such as tape and disk management, Legent may even have the edge, according to analysts.

Postal PCs

"We figure that with Goa adding the [Epic/MVS] tape adding the [Epic/MVS] tape management piece, they would cut into CA's business based on that," said Fred Joy, an analyst at Meta Group, Inc. in Westport, Conn. "Il think CA will have to take notice of this."

Goal and Legent customers for the most part greeted the news warmly. "Hopefully the news warmly. "Hopefully the news warmly cause [Legent to the control of t

news warmly. "Ropefully the merger will enable Legent to provide some of the require-ments we've been seeding for our automation needs by bring-ing over some complementary tools from Goal," said Wai Tow, systems director at New York Life Insurance Co. based in Leb-aron N.1.

anon, N.J.

One customer was grate that the deal did not take a different tack. "Thank God it was by CA," said John Wintenu vice president of informati systems at Gottschalks, Inc. Fresno, Calif.

Fresno, Latt.
Howard Taylor, assistant vice
president of Manufacturers Hanover Trust Co. in New York, was
not quite as upbeat. "This is
Continued on page 16

Direct mail put on notice: Boost service or lose sales

BY CAROL HILDEBRAND

Direct-mail vendors with an em-phasis on rock-bottom prices are grabbing a chunk of the per-

continued to the perboard computer makes.

But as their powers that for computer makes,

But as their power that for computer makes,

But as their power that for computer makes that for computer makes that for computer and computer makes the power makes.

The power makes to power make

research analyst whose Gateway 2000 PC was down for more

814.5

the information services group at Bethlehem Steel Corp. in Chesterton, Ind., said that it has been taking a "tremendously been taking a "trementously long time" to get Gateway parts. "It's hard when it's in a produc-Continued on page 12

County thinks small, dumps 4381 for LANs

BY CHRISTOPHER LINDQUIST

ORLANDO, Fla. — Real estate is a pretty hot commodity in Or-ange County, Florida — one of the fastest growing counties in the country. This vacation mec-

ca is heme to Disney World, Ep-oct Center and the Disney MGM mainframe kind of job. A mainframe kind of job. Or is it? Or is it? Not in the opinion of the infor-mation systems department of

tems department of the Orange County Appraiser's Office.

INSIDE

Arthur Anderson signs big Notes pact. Page 4.

SIM ponders software licensing position. Page 6. Goldman Sachs IS execu-tive departs for systems integrator. Page 12.

Tokes singing new tune on integrated network manage ment. Page 14.

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anagers can't

ce between com ete rubbish and

primo-grade sys-tems, probably be-cause most have nev-er seen systems of any quality in their en-

MEILIR PAGE-JONES



NEWS

Arthur Andersen aware stus its largest order of

Sybase gives Open erver a major upgrade. & The Society for Informa-tion Management mulls tak-ing a stand on vendor licens

Two executives leave DEC's PC mail-order bu ess to start their own fi 8 Sun and Tivoli Syn-

tems launch development and technology sharing ac-cord for Unix software. 10 A quiet Condex/Spring '92 highlights operating sys-tems and notebook comput-

10 Upcoming notebook models offer color, more sto age and affordability on the

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14 AT&T, BT and MCI position their inter work managem ms to spur sales

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lose out. By Edward

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EXECUTIVE BRIEFING

■ Legent will acquire Goal Systems, solidiying its position as the No. 2 independent player in mainframe systems software. Users and analysts greeted the announcement positively, saying the new Legent will present a strong alternative to Computer Associates. Page 1.

U.S. programmers may be going the way of the dodo bird, rendered extinct by way of the dodo bird, rendered extinct by cheap, high-quality and productive coders overseas. But the fall of the American pro-grammer is not a foregone conclusion. Com-panies that care about their staff and about software quality, reusability, modern pro-gramming tools and measurement will help U.S. coders stay world class and viable. Page 111.

 Novell says its LANs can be managed actively from a central IBM NetView console. That's good news for those trying to lessen the chaos of keeping large networks going. Page 1.

■ While direct mail ramps up as a popular PC buying channel, service and support at some mail-order vendors is having a hard time keeping ■ The biggest hoople at Comdex/Spring '92 will center around the recently in-troduced Microsoft Windows 3.1 and IBM's OS/2 2.0, which will go head-to-head in

■ Downsizing here means no mainframe... The Orange County, Florida, Ap-praiser's Office opts for a client/server network in-

sortware. The deal hes tus' push to establish N a collaborative com standard, in part becau dersen will also recon Notes to its clients. Pag

Tools that manage is

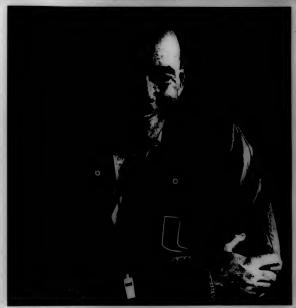
management tools ed him to go to a pri-

■ The Pentagon endorses and twee reuse and the con-cept of megaprogramming but vendors who supply sys-tems to the government as-tems than enthusiastic about

The 5th Wave



COMPLETERWORLD



"Product quality. Technical excellence. Industrial-strength applications. Three simple reasons why Computer Associates has been my most important software vendor for more than 10 years."

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To us, every mission is.

for OS/2 2.0 arrival

BY ROSEMARY HAMILTON

BOCA RATON, Fig. — After mouths of nearly round-the-clock work, IBM electronically nd the general ava

They have been under a lot

earse," for the 6:30 ng, said David Blu-



soon hore 29 years, and I've never seen so much excite said IBM's Cannavino while speaking to users last week

of pressure," said Gary Weis, se-nior vice president of network-ing and technology services at Sears Technology Services, Inc., a division of Sears, Roebuck and Co., which received the elec-tronic version of 2.0 last week. "They really had to bust their families, and they did it," be add-

ed. Now the hard part begins. While its core group of users are pleased with the final cut of 2.0, it is still unclear whether IBM will win over large numbers of non-IBM customers. One

of non-tibil customers. On things is certain: it is going to try.

"It as real live operating system, not just a face-lift on DOS," said James Cannavino, IBM vice president and general manager of the Personal Systems Division. "I've been here 29 years,

Pulling out all the stops kcording to Cannavino, IBM will hanch an extensive prist advertising campaign as well as of-er bargain-basement pricing and has acheduled 800 customer veents for the remainder of 1992. Shrink-wrapped versions will not be on most retail shelves until ster in the mosth. Canna-vinos confirmed that manufacturing of those wersions, which will shall be to distribution, began last.

The company's performance at last week's meeting of the New York Personal Computer Users Group gives an indication of how seriously IBM is taking its

menstein, apokesman for the user group. "This is the first meeting we ever had where a company set up a control center. They had cables, monitors, mine

technicians - it was p

Cannavino was joined in the monstration by the program-ng team via a live hookup to operations. Biblioms arranged to have the very first shrink-wrapped version of 2.0 definered via Federal Expense to Cannavino during the meeting. Blumenstein said.

Some industry analysts said BM could surprise sheepica with its strategy to move OS/2.

John Dunkle, presidentifications of the property of the presidentification of the presidentification.

Moutlets.
"For those who don't believe it IBM knows how to market, next three months will show very strong marketing and rchandising effort," Dunkle

Back in the corporate world, users are finding that IBM has cleaned up the final glitches.
"It does look like they tight end of the finite sup," and David Moran, a systems consultant at fluon Cop., an insurance company based in Portland, Maine. "The been working with this code from Day 1, and so I've sava all the progression."

this code from Day 1, and so I've seen all the progression."
Moran said a 20 bag had prevented him from easily changing the color of text within an icon in the Workplace Shell. When began working on the electronically downloaded code, he found the bag had been fixed. "They waid attention even at that level

IBM rolls out red carpet | Andersen makes big Notes buy

To order up to 60,000 copies, remarket groupware package to key clients

BY ROSEMARY HAMILTON

CHICAGO - Arthur And or Co. gave Lottes Development Corp. cause to whoop it up last week when it revealed plans to purchase up to 60,000 copies of Notes, the largest single order of the Lotus workgroup software

date.
"I believe that there are m Communications Network Ar-chitects, Inc. in Washington, D.C. "There is no other solution in the marketplace that has yet surfaced to provide a mechanism for collaborative communications."

surfaced to provide a mechanism for collaborative computing." This latest Lotus contract, signed jointly by Andersen Consulting and the tax said; group Arthur Anshersen, is significant, and the said of the consulting and the tax said; group Arthur Anshersen, is significant because Andersen Consulting will also recommend Notes to list clients through its vast network of 21,000-pins consultants.

Lotus has licensed appreciately 130,000 copies of Mose and State of 1,000 pins consultants.

The Andersen deal calls for an initial 20,000 copies with the opinitial 20,000 copies with the opinitia

The Andersen deal calts for an initial 20,000 copies with the op-tion to purchase up to 40,000 more. Prior to this, Lotus' big-gest customers were Electronic Data Systems Corp., which had ordered 15,000 copies for instal-lation at parent company Gener-al Mosors Corp., and Price Wa-

"I carry it with me ever ere in the world," said Robe

terhouse, which initially ordered 10,000 copies. The building Notes momen-tum does not bode well for Lotus rivals Microsoft Corp, and Bor-land International, Inc. Both are just getting their workgroup ore, a managing partner at hur Andersen who has been ig Notes for three months. benefit to Notes is "the cre-

land international, Inc. Both are just getting their workgroup strategies of the ground. "This is incredibly significant." Frank Michaedi, a program director at Meta Group, Inc. in Westport, Com., and of the Andersen deal. "The seem many new [Notes] plate out there, and I've seem plates more to wick-scale implementation in the last air months. It is becoming a standard group productivity opplication."

The very heart of it Notes will become a core piece of avvocatewide office

invest) because of the inst conse," Elmore added. "I conse," Elmore added. "I conse, "Elmore added. "I conse, "Elmore and to I had not a real to get the are less barriers to get

rently reying on minicampure based office systems, which A dersen is phasing out, Stucks said. There are about 1,000 u ers in various pockets of the company currently using Note but the primary installation w begin this summer, Stuckey said

Andersen would not say what it paid for Notes, but the high price tag had previously been a problem for Lotus. Its original pricing of \$62,500 for an order of 200 copies put off some poten-tial customers.

It is now using a single-order list price of \$495, although it still focuses on contracts of 200

Sybase Open Server upgrade: Few rivals in RDBMS game

BY JEAN S. BOZMAN

EMERYVILLE, Calif. - Sybase, Inc.'s 3-year-old Open Server product jor revision last week - one that will allow stock prices to trigger "sell" signs on stockbrokers' screens and enable overheating

water pipes in power plants to trip "warning" signs on operators consoles. Sybase began

Sybase began shipping its en-hanced software age, called Open Server 2.0, to us-ers who want to build gateways be-tween their rela-tional databases

sources of data.
The upgrade al lows users to hook Open Server to reNow, real-time, event-driven notifications — such as dropping stock prices or high tempera-tures in a factory — can be sent automatically to uners' worksta-

Ken Sobel-Feldman, a senior software analyst at Meta Group, Inc. in Stamford, Conn., said Open Server has few competi-tors so far because only a few



other vendors provide wide-spread connectivity to relational and nonrelational data. Prices range from \$1,130 for

a workstation version to \$76,000 for a minicomputer or mainframe package. Users do not need to install Sybase's SQL. Server relational database to use Djea Server, said Bert Hartman, rice president of strategic mar-teting at Sybase.

Some early users of Open rver 2.0 have had the product house since late last fall. Dirk sperson, vice president of soft-



Largest worldwide RDBMS market share: 30%



Fastest benchmari ever: 1,073 tpsB -Codd & Date



First RDBMS to validate ANSI/SQL level 2 with integrity enhancements an



Most open client/server RDBMS: 173 platforms, 28 networks,



First RDBMS to run on a massively parallel supercomputer



Fastest benchmark on a VAXcluster: 425 tpsB -Codd & Date



Fastest benchmark on a VAX 6560: 153 tpsB



Largest worldwide DEC VAX VMS RDBMS market share: 51% -Gartner Group



Fastest benchmark on an IBM-compatible mainframe: 416 tps -Codd & Date



Largest worldwide MS-DOS and OS/2 RDBMS market share: 41% -Gartner Group



Fastest benchmark on a UNIX minicomput 319 tpsB



Largest worldwide, UNIX RDBMS market share: 47% -Gartner Group

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NEWS SHORTS

ockhoed downsizes IS units to the property of the control of the

IP, Intel in chip pact wiett-Packard Co. and Intel Corp its technology ness watered Co. and least Carp. are expected today to un-tacknotagy agreement whereby the companies will con-levely develop a chip set designed specifically for the HP (RX famely of 1940 reduced instruction set computing pro-chamed X stations. The integrated circuit devices will be with leafs a 1960 CX series of superscalar microgrocou-tor provide chapt for X facilities marked.

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A triad of PC price cuts

A THOSE OF PT-E PT-CE CUTS

Length; the vary many is the of personal computer violates in the control of the co

Short tokes

BM said will sho the AIX/ESA operating system, which is bound as the Open Services Productions (SSI), is also Jose on the Open Services Productions (SSI), is also Jose Services Productions (SSI), in the Jose Services Production (SSI), in the Jose Services Production (SSI), in the International Conference of the International Conference on the International Conference

SIM considers advocate role

At its meeting, members ponder proposed position on licensing policies

BY CLINTON WILDER

WEST PALM BEACH, Fb. -The volatile debate over ven-dors software licensing policies moved to a new forum last week
— the traditionally low-key Society for Information Management (SIM).

At the annual
SIM Institutional

position state-ment on vendor

ment on vendor licensing policies. Although any formal stance could be months away — pending review by SIM's executive management and full membership — such ac-tion would represent an unprec-edented role for SIM as a user

edented role for SIM as a user advocate on a sensitive issue. Chicago-based SIM, the larg-est professional association for high-level information systems executives, has 3,000 members. executives, has 3,000 members. As customers, "If think we represent a significant percentage of the software vendors' revenue," said Wilkiam Zeltz, director of IS for the agricultural group at American Cyanamid Co. "As a professional society, SIM ought to be taking a look at and issuing statements on these issues, which can have a significant

putes.
Last year, Revlon, Inc. sued
Logisticon, Inc. after the vendor
"pulled the plug" on its software, claiming that Revlon had
not paid its bills [CW Oct. 29,
1990].

ment systems devision at Protects
Gunshele C. "New probably
these insens individually, so perthese insens individually, so perThe talked to second other
more than a group.

"The talked to second other
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work here," and one member
to requested succepturity. "It's
Software iconsing was one
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and for discussion of whether to
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the second of the second of the
more than a second

North roses are pints. SIM has traditionally kept a SIM has traditionally kept a low profile on sensitive or controversial issues, but many members said they believe the time in right for change.

"As CIOs take more aggressive rotes in their own organizations, that should be reflected in SIM taking more aggressive stances on issues," Mann said.

Health care awards given for most innovative systems

BY MITCH BETTS

WASHINGTON, D.C. - It did not have the glitter of Holly-wood's Oscars, but the health care industry last week present-ed its first-ever awards for "in-formation technology excel-

The three award winners — LDS Hospital, Complete Health, Inc. and The Travelers Corp. all built innovative systems at a time when the industry is under intense pressure to automate ad-ministrative functions and raise the quality of patient care. LDS Hospital in Salt Lake City won top honors in the clini-

cal systems category with an ex-pert system that provides measurable improvements in patient care. The system collects patient-specific data from various instruments and departmental systems, analyzes the data and provides feedback to nurses and physicians on medical strategies.
For example, the system Furthermore, the system re-minds the surgical staff to admin-ister infection-fighting antibiot-ics at the optimum

time before an oper-ation. As a result of the expert system,

produperties and the second production of the

cheaper, but it also boosted per-formance, said Rick Harley, MIS director at Complete Health, Be-casase the CD-ROM drives are connected directly to the LAN, the system's 400 users "can pull up any image on any CD at any time," he said.

During the scanning or incoming claims and correspondence, the imaging system also uses optical character recognition technology to identify and extract data for use in the claims-processing system, Harley added.

DEC PC execs quit to form own business

BY SALLY CUSACK

MAYNARD, Mass, — Digital Equipment Corp.'s fledgling mail-order computing business appears to be experiencing seri-ous growing pains, as evidenced last week by the resignations of two influential ex-cutives in the personal computer group, John T. Rose, vice president of DEC's

DEC, Intel reveal alliance

BY SALLY CUSACK

MAYNARD, Mass. — Digital Equipment Corp. and Intel Corp. revealed last week that they are collaborating on a range of oint software projects for the massively

rallel computing environment.

The first project, a new high-perfeance version of the Fortran language, ready under way. The architecture-ipendent, high-level programming lange compiler will be designed for use earlied computer.

rs and.

The alliance announcement raised a
w eyebrows in light of the fact that DBC
was a small state in manively parallel
ystems maker Maspar Computer Corp.
Stampyrale, Call
"This must be a source of some conrafe Maspar, to I don't think it came
a a surprise," and Own Serlin, editor of
The Serlin Roport on Parallel Processto MADO, Call

Serlin Supil the expocation in the inSerlin Supil the expocation in the inSerlin Supil the expocation in the in-

Los Alton, Calif.

Serlin said the expectation in the insury had been that DEC will be reself insury had been that DEC will be reself interference of the control of the co

through the technology that is included in the new compiler.

The language compiler will include special facilities, called directives, that can be used to lable compiler operations. This capability will give customers ar-chitecture independence and will also al-tow software developers to create appli-cation programs that can be compiled to no of different weather's hardware plat-forms, such as those from Massay. Gray Research, Inc. and Convex Computer



IBM's UK moves signal step toward new breed of servers

BY MICHAEL FITZGERALD

WHITE PLAINS, N.Y. - IBM's rec announcement in the UK of two high-end Personal System/2 Model 95s signals a step toward a new class of servers from the giant personal computer maker that should appear in the U.S. later this month, according to any house.

according to analysts.

The two servers, dubbed the AMF and the AFT, represent a new high end for

IBM's server line. Both use Intel Corp.'s 50-MHz I486DX processor and feature

50-MHz 1486DX processor and feature, specialized random-secoses memory. Small Computer Systems Interface and the Micro-Channel Architecture but. The AMF will come standard with 8M bytes of RAM and a 100M-byte of the three of the AMT will have 16M bytes of GAM and a 106-byte hard file soft. The RAM is error-correcting code (BCC), which was designed to prevent system crashes and is in widespread use

on midrange and mainframe systems. IBM has moved in fairly early on a tread that has seen a handlu of PC vendors use ECC RAM in their high-end file servers. Observers as did that while servers with ECC memory are beyond the needs of most users right now, and as client/server compacing becomes more widesystand, and their servers with the type of availability permitted by ECC memory will increase.

Though customers may not need the sew servers now, "It's a technological up new servers now, "It at technological up-tick for IBM, the same business as with the SLC chips," said Frank Drubeck, president of Communications Network Architects, Inc. in Washington, D.C. The Model 90 and Model 95 have been among IBM's most successful PC prod-

ucts. The company said it is and has al-ways been oversubscribed for these sys-

terns.

IBM will also sell a special processor complex that is said to permit faster I/O and CPU performance. The processor complex has the Intel So-MHz chip, memory controller, bus controller and direct-memory access logic and will be made available to Model 90 and 95 users who wish to upgrade. Upgrade costs were not available.

available.

IBM is also expected to release a processor suggrade card for the Model 95 with Intel's new DX2 chip. However, IBM refused to comment on its U.S. plans for the produce.

Analysis and they would watch IBM's

Analysts said they would watch IBM's pricing on the new models closely.

✓ Quality Of Technical Support Clean Code Production ✓ Ability To Increase Programmer

Productivity ✓ Responsiveness Of Vendor Service

✓ Speed ✓ Overall Ease Of Use

✓ Training Required To Use Product
✓ Costs vs Benefits Provided

✓ Ease Of Installation

CA-Realia COBOL

CA-Realia CICS

That's what the most recent Computerworld Buyer's Scorecard of COBOL software said: CA-Realia COBOL is the highest-rated COBOL solution

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compiling and debugging large system applications.

But you be the judge.
Call 1-800-CALL CAI today for more information GOMPUTER on CA-Realia COBOL and the scorecard article. With COBOL software this good, you win. CA-Realia IMS

SSOCIATES CA-Realia DL/1

CA-Realia 370

Sun, Tivoli align on net control

BY MARYFRAN JOHNSON

MOUNTAIN VIEW, Calif. - Objects. objects everywhere — and closer than you think.

you bink.
That could well be Sun Microsystems, Inc.'s theme for the joint development and technology sharing agreement announced last weck with Tivol Systems. The two companies intend to create the control of the con

Group.

The jointly developed tools will be bundled into a future version of Sun'a Solaria operating system, with defivery dates still at least a year away.

Tivoli's object-oriented technology is

also a key component of both the Open Software Foundation's (OSF) Distributed Management Environment and Unix In-ternational's Atlas framework for distrib-

Secure future ahead With Sun hopping on its bandwagon, Tiv-oli has secured a pivotal place in future distributed management software prod-ucts from the OSF, Unix International

ucts from the OSF, Unix International Man, analysts noted.
"Troks is the first company to implement a flexible, object-oriented way to manage complex systems," said Judith Harwitz, president of the Harwitz Consuling Group in Newton, Mass. "They were in the right time with the technology everybody needs."
Trod's Welform software includes an Trod's Welform software includes an

Thors's Waldom software includes an object-oriented managing environment, a group of core applications and the failily object-oriented managing environment, a group of core applications and the failily of applications and the failily object of applications and the size of perform object managines to add users, make a failing of the size of perform object managines to task developed with Triod will applicate the size of the

Now You Can Pick Winning Software Without Consulting The Board.



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Oracle can put the odds in your favor. Our open family of portable software not only works with other vendors' products, it runs across virtually all computers, operating systems, networks and user interfaces. Making any present of future combination a winning one.

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ORACLE

Software for people who can't predict the future.

Show to highlight Windows, OS/2 duel

BY CAROL HILDEBRAND

Page 12 smaner scale than the annual tunns extravaganas. A Com-x spokeswomen said the fore-st was for a show of the same se as last year's, although reg-ration is about 25% ahead of

Slow organizers said they ex-sect about 62,000 attendees at the 12-year-old show, with more han 900 companies set up on the exhibition floor — about the ame number as in 1991.

Vertety of topics
A special spotlight will be on the computer industry in India. Dell Computer Corp. founder and Chief Executive Officer Michael Dell will give the Comdex show keynote and is expected to dis-

unveiling at you-know-what World, the stage is set for a veritable orgy of one-upman-

ship.

Microsoft will have the offi-cial release party for Windows 3.1 and will sponsor a booth for vendo.a desponstrating applica-

anced that several hardware stors — including Dell, AST search, Inc. and NEC Tech-ogies, Inc. — will ship Win-vs 3.1 as a standard feature of

eir systems. IBM will make its first big ash with OS/2 2.0 this week

spass with CS/2 2.0 this week with a series of demonstrations and press events, including the final "OS/2 Live" update. Notebook computers will continue their seemingly endless march toward providing true desktop functionality. New mod-

els featuring color, Intel Corp.
1486 power, advanced networking ability and higher capacity
hard drives will all be on display
at the show. Pricing will continue to come down, with some
80386-based notebooks coming
in at less than \$1,600 (see story

ndwriting-recognition exten-in, signaling the opening of sat is sure to be a fierce strug-

company as a direct compensor to Windows and OS/2 2.0.

• Xerox Corp. a XSoft Divi-sion will unveil Rooms for Win-dows, a Windows-based tool that

noms" on a screen, helping to minate screen clutter. Lotus Development Corp. Il officially interested its

Roll out the products

and ove compact disc/read-only memory (CD-ROM) systems. Pricing on the multimedis systems ranges from \$2,399 to \$3,299, with the CD-ROM systems starting at \$1,599.

Nilson Electronic limaging will show a 12-in. magneto-optical disc drive featuring a \$2,200 k bit/sec, data transfer rate, 1,500 rotations per minute and Small Computer Systems laterface.

Interface.

• DeltaPoint, Inc. will unwrap Deltagraph
Professional for Windows, a new presentation
package that the company says employs artificial
intelligence.

Notebooks to get storage, color boost

BY MICHAEL FITZGERALD

CHICAGO — New notebook computers will abound here at Comdex/Spring '92, with some providing a splash of color and

tantial increases in storage.

Is expected, Toshiba
erica information Syss, Inc. and Zenith Data
tems will enter the color

CORRECTIONS

The price of Borland Interna-tional, Inc.'s SQL connection for ObjectVision 2.0 was incorrectly reported in the March 23 issue's

The Center for Advanced Tech-nology in Telecommunications is located at Polytechnic University in Brooklyn, N.Y. The story "Network managers: Beyond firefighting" in the Careers sec-tion of the March 30 issue nenotebook market. Toobbb will show its T4400SXC, an Intel Corp. I486SX-based notebook with a thin-film transistor active-

Tookiba will display a 7.75-pound notebook offering three hours of battery life, despite its battery-draining 486SX chip and color screen. Zenith Data's new Z-NOTE 325LC Model 120 also

NO Is 325LC Model 120 also as an active-matrix dispating that is an active-matrix dispating that is an instel 25-MHz 80386SL in inside. Both Toshiba and Zenth Data are expected to ship odels with 120M-byte hard tives, marking the advent of a we level of storage capacity in a notebook market.

Advances pricey
These will not come cheap: A
T4400SXC with an 80M-byte
drive will retail for \$8,199, while

Cenith Data will price the Z-NOTE 325LC at \$7,299, with a street price of less than \$5,299. The cost-cooscious might want to check out new mono-chrome notebooks, which start as low as \$1,595. That is the

price for the new five-pound CompuAdd Corp. 325TX, which includes a built-in track-ball and a 60M-byte hard drive preloaded with Microsoft Corp. pressued with Macrosoft Corp.
Windows 3.1 and special utility
software. The 325TX uses Advanced Micro.Devices, Inc.'s 25MHz 386SXL processor.
Grid Systems Corp. will introduce an Intel 386SL-based
notebook, the Grid 1660, for

notebook, the Grid 1000, nor \$3,995.
Zenith Data will release three monochrome models of its Z-NOTE line at Comdex. Included in the Z-NOTE line is a Ready-besk port replicator, which acts as a compact, plug-in version of a declaim switch. as a compact, plag-in version of a docking station, and extensive networking capabilities, includ-ing network client shells for No-vell, Inc.'s NetWare, Banyan Systems, Inc.'s Vines and Micro-

nologies, Inc. last week came out with Light Wave, a 5.8-pound notebook that uses Intel's 33-Hz 486DX chip. It will sell for

Screen woes force Epson to withdraw color system

TORRANCE, Calif — The fact that one of the early pioneers of color notebooks dropped out of the market last work because of problems with its screens aboud not be taken as a sign of broader difficulties with the emerging technology, analysis ask. However, they acknowledge that Epons America, Inc. 18 problems serve as a reminder that color notebooks will not enter the mortal coloring that the problems are the same than the color notebooks will not enter the mortal coloring and the same than the color notebooks will not enter the mortal coloring and the same than the same than the same than the same that the same

ter the product mainstream snytime acon.

Egrous, which introduced its MESL/SSC battery-powered
color notebook in November, said it will not ship the notebook
became it has runt into difficulties producing its screen, some
was using a metal insulator metal developed by Seiko Egrous
was using a metal insulator metal developed by Seiko Egrous
stap parent, and said it was unable to generate enough so
iccreams to meet its needs.

Egroun officials did not respond by green time to elsborate on

Epon officiate del not respond by press time to elaborate on the production problem. Del production production production. Del production production. Del production production production. Del production production. Del production production production. Del production produc

MICHAEL FITZGERALD



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MICRO FOCUS

Now have a regional designed of this plan (sense). But the last of the property of the propert

Mips introduces advanced RISC PC line

SUNNYWALE, Calif. — Mips Computer Systems, Inc. will mark the first anniversary of the Advanced Computing Environ-ment (ACE) initiative this week

Advanced Comparing Entrement (ACE) institute the weed ment (ACE) institute the weed column and the column and the column and column and the column and the column and column and ACC compatible systems more column and column and properties and ACC compatible systems more column and properties and properties

PC and workstation worlds. But the true target, according to an-alysts, is the high-end PC market powered by Intel Corp. a 1486

comment by Bank Copy's, Medical Copy's, Medical Copy's, Medical Copy's, Medical Copy's, Medical Copy's and Copy's Copy's

"The positive side is that there is finally an ARC machine ware story together," he said. On there, "said David Smith, as analyst at International Data Corp. in Franzingham, Mass.

High aspirations Mips Computer Systems' APCSystem family of dishless PCs and servers is based on the 50 MHz R4000 chis

try-level model: Magnum 4000 PC-50, desktop. occusing performance: 40 SPECmarks.* smory: 8M bytes expandable to 256M bytes.

Option: Up to 2G bytes of add-on disk storage. Availability: June. Pricing: 89,990.** um 4000 SC-50, departmental server.

High-end model: Millennium 4000 SC-50, dep. Processing performance: 65 SFECmarks.* Memory: 8M bytes expandable to 256M bytes. Bus: EISA (four slots). Option: Up to 7G bytes of add-on disk storage. Availability: June. Pricing: \$15.990.**

* Performance estimates are based on simulations done by Mips, not sudited beachmark testing. ** Reseller list prices.

ems, which would bring alor housands of PC application with it. The ARC specification leftines the minimum hardware equirements needed to ru Findows NT and Unix for ACE.

Running on RISC/OS

The Mips' boxes now run some
1,400 applications under RISC/
OS — the firm's Unix variant
based on AT&T Unix System V.
One early ARCSystem customer is AT&T Federal Systems

One entry ARCSystems consume in ATAT Peter Systems in Genemics, N.C.A. Any techniques in Genemics, N.C.A. Any techniques in Genemics, N.C.A. Any techniques in Genemics, ATAT has well improved in systems integration of ATAT's Units Systems V to the port a secure various of ATAT's Units Systems V to the port a secure various of ATAT's Units Systems proceedings of ATAT's Best Laboratories in Milliamy I. Lighton, bend of ATAT's Best Laboratories in Milliamy I. Lighton, bend of ATAT's Best Laboratories in Milliamy I. Lighton, bend of ATAT's Best Laboratories in Milliamy I. Lighton, bend of ATAT's Best Laboratories in Milliamy I. Lighton, bend of the Milliamy I. Light Milliamy I. L

Direct mail on notice: Boost service

tion situation when you can't af-ford to be down for a week," she said. Mass said she was consider-ing switching a couple of Gate-way servers into a less mission-critical environment because of

critical environment because of the situation. Such as these ser serving as notice for direct-enail marketers hoping to c-rock the corporate market. Getting a foot in the door — and keeping the account — will require rock-sol-did to the corporate market. Getting a foot in the door — and keeping the account — will require rock-sol-did to the corporation of "The ChannelMarket," a distribution newsletter based in Palo Alto, Calif., said that a company locking in systems-based support will have a tought time malament, past the growth bottlement.

"It's impossible to build (good support) on people support alone; 'Merrin naid, Jeff Kapian, director of research at Ledgway/Butaquest in Framingham, Mass, noted that the shifty of direct-mail PC vendors to control their support is the differentiating factor from those wendors moving through more traditional channels, whose support can vary widely, according to dealers. For example, Deff's according to dealers.

according to dealers.
For example, Dell's approach
to direct-mail salet, with an enphasis on strong support, has
been so successful that even Digtial Equipment Corp. has nodeled its direct-sales efforts after
it. IBM and Compas Computer
Corp. have both responded to
user dermands for heightened
support: IBM with its HeighWare

initiative and Compaq with a new service and support group. With users looking for more and bet-ter technical support, shortfalls could cost a company sales.

Colon Convey outs.

Colong carry on Contravery.

Some Gatterny customers said with Caterway service is conproved. The contravery of contravers of contra

importi quality just want;

"he sald, "disk acknowledge," that their technical approximation and proper personate are howing troble heeping up with service and the sald and their technical approximation and the sald and the

way recently opened a tech training facility. Schmith said the com

Schmith said the company gets between 4,800 and 5,000 calls a day, compared with about 4,300 six months ago, but it has been able to bring response times down. "We're still adding technicians, but not at such a fe-werish pace," the said.

While Dell has seen some sup-

port erosion, it is not nearly to the same extent as Gateway's. Joseph Trickey, PC coordina-tor for Stratton-Cheenman Management Co. in East Landing, Mich., usid it took is little-when it came to a notebook be needed repairs on. "It can usually get through on any one phone call," he said. "This time it took two attempts and about an hour to get through. It seemed a little under the said of the contract of the Row Strine, vice president of the Row Strine, vice president of

Sovine said be expects the re-sponse times to go back to nor-nal when the present two class-es of technicians are fully

SHL Systemhouse nabs Goldman Sachs' IS exec

BY NELL MARGOLIS

NEW YORK — Wall Street investment banking firm Goldman Sachs last week lost its most se-

ventioned tomaning form (common vention) and common vention of the control of the

corning deal is unlikely to follow in the near future.
"We did look at the outsour-ing alternative. It has a fot of po-tential—but it also has a tot of complecities," noted Rick Adam, the Goldman Sachs part-ner to whem Burns reported and tenn, among other things. Outsourcing discussions, with any potential bidders, are on long-term hold at Goldman, Adam said.

Strategic move
The Barns play appears to be the
latest in Systembouse CEO John
Oltman's plan to deepen his
firm's narriest share while raising
its profile in the U.S.—a strate,
if Systembouse is to gain the international player status be has
eyed since his arrival at the firm
last July.

also consequences are smooth the toughest in IS."

In the same and the copects his deporture to cause little dislucation
at Goldman Sochi' 800- to
1,800-person IS shop, He will
not be replaced, he said. Employess who reported to him will be
roorganized under Adam.
"Jim was key to the worldclass progress this firm has made
in IS." Adam sool. "I don't wast
to lose the benefits of his taiment of the same in the same i

ents.

He may not have to: System-house, Adam added, is a good bet to join such firms as Andersen and Chicago-based TSC on Goldman's list of preferred IS ser-



SYBASE

CLIENT/SERVER ARCHITECTURE FOR THE ON-LINE ENTERPRISE

Carriers posit net management as service

BY ELISABETH HORWITT

\$250,000 plus six results of de-velopment work to implement \$15 * Consert or AT&** Accu-manter literagues, centemers manter literagues, centemers manter literagues, centemers not couly in our pervices he also whatever mind premise squip-ment users have installed. Am amountain (Concert as a stan-dard-based mathieseder net-amountain (Concert as a stan-dard-based mathieseder net-dered have a stan-dard-based mathieseder net-ser in the standard mathieseder net-dered produces and a stan-tandard-base product enough to a select group of Farture 100 mm, all's spleams and, re-tained heart product enough to a select group of Farture 100 mm, all's spleams and, re-tained heart product and the sup-teraction of the select products of the select prod

port structure needed to "hand-look" most Fortune 500 to BT costs \$250,000 plus six companies through the arthous months or more of internal de-process of implementing Con-cert, the spokessman added. Instead, Barton said be liked "but can't just drop the box or

Concerted effort Instead, BT is using Concert to provide enhanced, end-to-end, multi-wador network manage-ment services as part of its Glob-al Network Service and Syncor-tion metavork estreaments al Network Service and Syncor-dia network outsourcing ser-vices. The firm is incorporating Concert in its network control centers and hopes to roll out a commercial service by mid-

commercial service by molecular properties. The service servic

nging into the future what for naturest management is expected to more then double

\$120 £147 \$415

the idea of turning management over to a carrier, particularly since Imperial Chemical is look-ing seriously at migrating its backbone to a virtual network service, such as BT's Syncordia. "We would want an integrated

munivendor network installa-tions was one major factor in the oil company's selection of AT&T, Stenanians and the

weador network man-agement product. But only about half the in-stalled base — estimat-ed by one consultant as mumbering 100 — uses the product to manage much non-AT&T equipment, a company

Corneratone place While MCI has yet to ship its Fo-

quarter as part of its Global Communications Service observations of the Grand Communication of the Gr

thervon Informa-tion Technology signed up for the service nearly two years ago as part of a Tariff 12 contract with AT&T, asid Victor Stepanians, supervisor of the Chevron Corp. subsidiary's network design group.

AT&T's ability to collect alerts from Chevron's existing

Novell paves way for host LAN management

ots of them out there, and they are not easy to connect to NetWare, "to explained.

Also, smoothing out the technical wrinkler what are now frus-rating end users who operate toth would render the AS/400 nove appropriate for the role of application server, according to

No longer a bit player Network managers contacted last week said NetWare for SAA will play an increasingly greater role in their jobs an downstaing accelerates. They said this is be-cause duties once separately abouldered on either the lighters or permail computer network proposed to the player of the proposed proposed to the proposed proposed to the proposed proposed to the management certainly would be of use to as

"Better management cer-tainly would be of use to us here," said Mike Lonero, asso-ciate director for the law school at Loyola University in Chicago. "Every year, a lot more of our termanals are being replaced with PCs."

inv school.

"Where our nets are close to mainframe data centers, they are supported by four! information systems (group). But we can't closely support networks far from those centers; someone at those sites has to be trained to support the networks."

Loner said.

The airline is dominated by Apple Computer, Inc. Macin-toshes, but it continues to add new IBM-compatible PCs wired via 10Base-T's unshielded twist-

vas Husseer a our cel-pair wire.

The company is moving away from Token Ring to Ethernet-based 10Base-T to reap the savings of using existing unshielded twisted-pair wire.

Unlike Token Ring, Ethernet LANs depend on servers to coor-dinate LAN-to-host traffic.

School of hard knocks
McDonald said Alaska Airlines
has learned a few lessons from
its Macintoshes, namely that
NetView management from the
company's Amdahl Corp. 5890

OE typically stops at control-Macintoshes through control-

ETTER MANAGEMENT certainly would be of use to us here. Every year, a lot more of our terminals are being replaced with PCs."

MIKELONERO LOYOLA UNIVERSITY

lers has been impossible, he said. NetWare for SAA should circum-vent that problem for PCs and enable operators to send and re-ceive management information to and from desktops, McDenald

lded.
Novell said it encourages cus-mers to manage NetWare grough NetWare Management tryices (NMS) in conjunction the higher level, third-party agement systems. In the e of NetWare for SAA, those

CW Chart Janet Gen

Net/Yew.
A spokenman for Novell said to doubts managers would dramp MMS for Net/Yew entirely, but the company would not impose roudblocks to such a more.
Along with the Net/Ware for SAA announcement, Novell said, it is now shipping its Net/Ware Asynchronous Communication Services Wersien 3.0 as loudship of the services of the servic

Asynchronous Com-munications Services is an integrated LAN communications appli-cation designed to sup-port any combination of network-to-host or net-work-to-network link.

DRERO Wise move
CRSITY Alaska Airlinea' Mc
Donald applauded the
decision to make NetWare Asynchronous Communication Services a hardware-independent NetWare Loudable

software — shared some of the application's overhead.

Communication Services is now shipping and is available in 2-, 8- and 32-port licenses, priced at \$595, \$1,795 and

Host hooks

Novell's NetWare for SAA Version 1.2 includes the following elements:

• 3270 terminal emulator for Unix and OS/2 clients. A maximum of 508 cos-current host sessions.

The ability to share a server or run on a dedicat-ed machine.

 The ability to link with two hosts at the same time for redundancy and load A \$1,995 price tag for 16 sessions; up to \$14,995 for 254 sessions.

JIM NASH

Momenta to unveil Windows 'pentops'

Y JAMES DALY

MOUNTAIN VIEW, Calif. — Momenta Corp. is slated to unveil this week three pen-based laptops that can run Microsoft Corp.'s newly asnounced Windows for Pen Computing platform, which is also due to ship this week.

due to sing uns wees.

The move is expected to widen the appeal of Momenta's "peetop" portable, which thus far has been available only with a proprietary operating system. The machine functions either as a pen computer that uses an electronic sityins to write freety on the flat panel screen or a traditional japtop computer that uses an at-tachable keyboard.

Momenta's proprietary operating system allowed it to ship months earlier than er pen-based machines, which were ting for operating systems from Minorft and Go Corp., but the fact that it is that the state of the fact that it is that has only sold "several thousand" chines since their unveiling last Octoaccording to John Rizso, vice presitof marketing.

Iwo is one
The high end of the new lineup is headed
by the \$4,495 Momenta 1/80, which has
he dimensions of a three-ring notebook
and offers both the Windows for Pen
Computing and Momenta operating sys-

ms. The Intel Corp. 80386-based manine is equipped with 8M bytes of ranmo-oceas memory, an 80M-byte hard rive and a suite of desktop applications, cloding fax, spreadsheet, presentation schage, electronic notepad and address tool.

book. The mid- and lower range, which will offer only the Windows for Pen Computing platform, will be filled by the Monnes to 80M-byte 1/80W and the 40M-byte 1/80W and the 40M-byte 1/80W will self for 83,895 and 83,595, respectively. Batteries provide six to eight hour of life with the current reflective screen. A model offering:

backlit acreen will be available in June, Momenta officials said.

Analysis still have high hopes for the or disr-pound Moments products, hich they said could popularise pensaed systems far more resality than the urrent tablet-only models offered by ord Systems Corp. and NCR Corp. "The entop machine will change the way penthant about mobile computers," said il Lomponis, publisher of the Pleasan-

The new models offset the need for a couse with the use of the on-screen Comsand Compans. To alter a block of text or graphic, a user touches the pen to the creen to produce the circular compass. commands occur by stroking the pen in

Yocam to take Momenta helm

Programmer Apple Computer, Inc. executive Delbert W. Youam has been named chairman, president and chief executive officer at Momenta Corp.

Momenta Corp.

Yocam, 48, will take over management responsibilities from President and founder Kamran Elabian, who will take a month off and then rejoin the firm as executive vice president for strategic partnerships [CW, March 30].

Lew, Mancra Suj.
From 1985 to 1988, Vocam held several senior management positions at Apple, including chief operating officer and president of both Apple Phofice and Apple Education, as well as general manager of the Apple II Division. Under his leader-ship, Apple's revenue grew from \$1.9 billion to more than \$4 billion. Operating income rose from \$1.02 million to \$620 million in the same

period.

He has also held managerial positions at Ford Motor Corp., Control
Data Corp., Fairchild Camera and
Instrument Corp. and Computer
Automation, inc.

Momenta director Fred Nasem
said, liocam's experience at Apple
during a heavy growth period will
serve as appropriate preparatory

said becam's experience at Apple during a heavy growth period will serve an appropriate preparatory. It is not a proper proper to the proper work for his job at Momenta. The has a proven track record in leading and growing emerging technology companies. Momenta is evolving from a venture-funded start-up to a rapidly growing system company, and it is appropriate at this time to add the management said, industry volvine.

vides." Momenta officials also announced the addition of Bill Hambrecht — president and oc-CDO of venture capital firm Hambrecht & Quist, Inc. — to their board of directors. Momenta said it has received commitments for additional finaning, which will be final by April 15. JAMES DALY EIS II:

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The New Mat Cry Road of Dictions will deply a signature
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toward Image Missioner Software tools reading on an IPI
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primare and Pallias Link coursers.

Truck driver registry in gear
A comparised registry of truck drivers — mandated by the
U.S. Congress to ground unusel drivers — became fully opera-tional bat work, according to the American Association of Mo-national and the Comparison of the American Association of Mo-national and the Comparison of truck drivers below insuing a new commercial is-come. Electronic Glast Systems Gorp. rous the maintireas clearing/stoon, while IBM's Information Network connects the Solution prisons for information Network connects the Solution prisons for information American

Navy to spy with HP workstations NGWY 10 apy WITH 1PF WORKEVENTORS
THE U.S. Nury has selected Highes Des Spreams, a unit of Bughes Aircraft Co., to provide up to 4,300 workstations order a contract Valued at 1817 million over four pears. The
award in for the Theistical Application Computer program,
toom as 174.2, and involves partnerships with ETIG, inc. in
Vacana, Via., and RP. Highes will provide RP.
Apole 5000 Certa 700 workstations, which the Nury plants to
use in electronic intelligence aphering from surface consist
they, submarks and band-search fourching.

EDS enthers immoging morke?

Two years in development, EDS image statement product for the financial services marked in some year low off on a contract basis. The outsourcing pisper is making its entrance as an image warder through a service operating out of its four West Coast processing centers. EDS is busing on the suitity approach to appeal to house and other financial institutions that craw image statements as a competitive advantage but are levery off the association of cut and risk.

reastional Data Group's (IDG) Emerging Technol-Applications Group has amounced a series of compact read-only memory databases developed with the sid of bridge, Mass-based Dataware Technologies, Inc. discrimination in measure interests developed with the aid of Contrologie, Main, Smeet Datemers Technologies, Inc., Contrologie, Main, Smeet Datemers Technologies, Inc., Contrologie, Main, Smeet Main, American State of the search data from Dio publications as well as martes in search data from Dio marcels from. Occupied Assistant ANYS specific systems hased of them as proposed to proposed the search of the search of the search of the proposed to the search of the search of the proposed to the search of the search of the Smeet, the up thouse stated in the LY. Smell and Smeet, the up thouse stated in the LY. Smell and Smeet, the up thouse stated in the LY. Smell and Smeet, The search of data that friendings on Smeet Conference, the Messon Com-trol of Albert friendings on Smeet Conference (Smeet) Better of Albert friendings on Smeet Conference (Smeet) Electric to all center vice prosters of substances of collegence. Clean CrO and sealer vice prosters of substances of collegence.

Legent aims to acquire Goal

quite a shock," be said, noting that the bank recently complet-ed a "difficult" comparison of automation tools and had decid-ed to adopt Geal's.

Executives from both Goal and Legent made it clear that at this juncture, one organization is

"We decided we could get further faster and more effectively by com-ing with Legent rather than by going slone," Goal Chairman David C

ers are deman

ers are demanding fewer suppliers, and we couldn't go in and say, 'We have an end-to-end so-pution.' Given the two companies' complementary product lines, similar coreporate cultures and "ahared visions of the future," Burton said, a merger was "and companies" complementary product lines, similar coreporate cultures and "ahared visions of the future," Burton said, a merger was "and companies" companies.

The right combination
Out of 130 total packages from
both companies actions both companies, only about eight overlap, Legent Chairman Joe M. Henson said. The primary competitive area is in automated operations, where the plan is to operations, where the plan is to take the best parts of both prod-uct lines and, during the next two years, meld them into one product. Automated migration tools will be provided, the Le-

gent executives said.

Charles Phillips, an analyst at
SoundView Financial Group in
Stamford, Conn., said Goal has a

really executed its marketing plan. Legent, he said, has a smaller number of focused prod-ucts and an experienced sales team. "It sounds like it will

Legent's sincul year. Mile White, a financial ma-mile White, a financial ma-fer and the countries Legent would impose meeping cuts in the sales force or technical staff. Phillips and be expects lyoffs of about 100.

Chock Anderson, technical services manager for Kern County in Bakersfield, Calit, aumined up what seemed to be long as the support stays there, that a all that we're concerned about." "We've been very satisfied with Goal products and support and I just hope they continue along that path," Wintemute

When about IBM?
Another point was raised by
Bruce Allen, vice president at
Meta Group, "The thing is, how
will they deal with IBM? Goal is
ted to IBM, and it appears that
Legent is going to be tied as a result. But there's a lot of trubble
brewing with the SystemVices
neartnerships."

the number will be about "the normal yearly attrition for a company of our size" and that any staff reductions would be completed by Oct. 1, the start of Legent's fiscal year.

Milke Wallace, a financial ana-ness at 1885 Securities in Mes-

prevent with the Systemview partnerships."
Legent, in fact, has already declined to participate in IBM'a SystemView Alliance, Burton said, because of the fee structure that IBM wanted to impose.
While that stance has not changed, he said, the plan is to the structure that its stance has not changed, he said, the plan is to



services are.

Still, observers raised a few sticking points. "This marge most point the property of the point of the property of the property of the property of the property of the product of the product to come up with, comprehens CA has, such as which products to come up with, comprehens CA has, such as which products to come up with, common instaffing will result."

But no acknowledged that a chairtely small member of employees will be not but mid federal excitations of the product of the pro

CA's new role: Merger observer

be pending merger of Legent and Goal puts the shoe on the other foot for arch-

CA, the acquisition mewe of the software instantly, habe the reportedly courting Goal, but the relationship never bloomed. Now, industry observers are abuse to be considered to the country of the count

its tarnished customer service image.

If CA does not accomplish this, Goetz and other observers said, Legent/Goal could eventually usurp a big chunk of CA's loyal but frazzled

customer base. Gottschalks, Inc., a Freuno, Calif.-based department store chain, uses both CA and Goal software products but said it is happier with the

competitively priced Goal products. The company has been replacing CA software during the mast four years have been replacing CA software during the past four years whenever possible, according to John Wintenmete, Gottschallen vice president of John Wintenmete, Gottschallen vice president of CA. CA: executives through off the competitive majorizations of the Legent/Goal team. "I think it is good for the software loss try, year. Winten a company of the competitive of the competitive product of the competitive product of the competitive product of the competitive product of planning at CA. Although CA: clearly competes with Legent and Goal in the mainframe systems software areas, Kanara and

Meanwhile, the board of directors of Goal last week adopted a Shareholder Rights Plan, which was designed to "deter abusive market and takeover factics and unsolicited takeover at-

and JOHANNA AMBROSIO





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cial air carriers. Choice In 1986, America of users I

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Stalled mini makers hit hard by continued losses, layoffs

It has yet to conk out in the breakdown lane, but traditional

Consider the following finan-cial dischows:

• Princ Compreh. Ink. 1 pinets

• Princ Compreh. Ink. 2 pinets

• Coruppe Bull side that despite a

• Grouppe Bull s

Ron Skates acknowledged that sales of the company's propri-etary MVs — its primary source

of income — are be-low par. "MV sales were not as strong this quarter as we would have liked, but that's not the reason for today's announcement," he

DG's Skotes: MV Skates said the 12% layoff is required because DG no longer

cause DG no tonger needs as much admisstrative staff. Most of the staff reductions will affect the European operations and will not touch research and development or sales, according to the company. Skotes declined to say wheth-

loss, which would be on inva-led the property of the property of the pro-let, Joseph Parne, an analyst at Joseph Parne, an analyst at Acet. Bown & Son, inc. in Bal-dons for the quarter but could not specify the annount. "Were such as the property of the pro-sent property of the property of which was a property of which was a property of When Prime signed a results when Prime signed a results when the prime signed as when Prime signed a results when the prime signed as when the prime signed as when the prime signed present member of the prime that soften is in the present member of the prime signed product memors designed that the prime signed for the prime signed product memors designed the prime signed product product product product memors designed product product

customers are dumping the plat-form in droves.

In 1991 alone, Prime cut nearly 25% of its staff, from 8,750 to 6,750. The restructur-ing, which caused a \$330 million charge to 1991 results, may be too little too late, according to

County thinks small, dumps host for LANs

unning Novell, Inc.'s NetWare 111, seven servers, some 150 ersonal computers and a gate-ray connecting more than 500

Meger player
This is not a halfway job, with the
mainframe relegated to a server
role. Instead, the big iron is
headed out the door.
"The LAN is infinitely more
flexible in allowing us to pursue
and achieve objectives quickly,"
said Eric Singleton, director of
IS at the Orange County Aprelated Office.

Both the Corney County Ap-Frainter (office). The Corney County Ap-Frainter (office). The Corney County County Projects that could take months to complete on the main-frame can be done in weeks on the LAN using object-oriented Pc-based tools such as Syscorp International, Inc.'s Microstep, Singleton stided.

The County County

ngleton said.
The LAN also offers unprecented connectivity to other destrumental systems consisting
LANs, Digital Equipment
orp, WAXs and IBM main-"There's not a con seems. Letter 8 not 8 computers system or device that will not talk to the LAN," and Alan Mariotti, 8 senior systems engineer at the office.

The first phase of the 12-month project entailed installing and testing the network while keeping the 4381 on-line. Sin-

gleton estimated that during the past year, switching to the net-work has allowed the county to cut some \$800,000 from a \$1.8 million bedget for operating and maintenance costs. When the 4381 is removed later this sum-ner, Singleton and he hopes to realize another \$400,000 per ware in saying.

walke sucher \$400,000 per Cont aways governed atmost immediately, despite the start-cont of the start of the

Pressured but unefreid But even with the anticipated benefits, such a project would be daunting to a private business, and it can be even more so to an organization forced to cope with government bureaucracies and hebiton mofe restinations.

sure on governments, the true fear that you might go out of business if you don't get [down-name] done is not there," said Jerry Meching, director of the program on strategic computing and telecommunications. and telecommunications at the John F. Kennedy School of Gov-ernment at Harvard University in Cambridge, Mass. The Appraiser's Office did have one significant advantage

nave one significant advantage over many government offices, however: As an elected official, the appraiser does not have to submit projects for competitive bid. "We are very much like a private business here," Single-

ton said.

The decision to go with a net-work occurred about 15 months ago during discussions concern-ing the upgrade of the then 3½-year-old 4381. The choice came down to "either move in the mainframe direction or take a old step forward and go for the ownsizing," Singleton said.

downsizing, "Singleten said.
After getting the blessing of
Orange County appraiser Ford
Hausman, the step was taken.
All mainframe applications —
runtime, on-line and batch
were converted using Realis,
Inc.'s Realis Cobol and moved to
Compac Computer Corp.'s 486-based Systempro servers.

Getting by While hurdles did arise, the office

and that technology was just reping up with its needs. For ample, response times to end ers were unacceptably slow. In problem was solved by sup-

plying users with enough memo-ry — averaging 6M bytes — to load all their applications onto the local machine at log-in time. As a result, mainframe-like

Singleton looks back at the project, which is now nearly complete, as being a very excit-ing time for him and his depart-ment, with the risks far out-

weighed by the benefits. "I saw it as a grand opportunity to re-evaluate every function of the IS department," be said. "Down-sizing is an opportunity to plow through everything. Everyone

Aim Droege, a senior system engineer for the county, agreed. "Some of the tools that we're some of the tools that we're orking with will be primitive of archaic, and this whole thing ill get a lot easier, but I ouldn't have anyone shy away. here's a lot to be gained by do-gthis."

Network nirvana

he Orașie Cousty Appaleir a Officir a cânti Jerver system in a technology judică i sare dine.

Tramite Norde, Jac. 2 Neurology se le server de la care de

andero Artemecons-vance, tree of random-scores memory. Microsoft Corp.'s Windows and MS-DOS 5.0's memory anagement capabilities allow the users to switch among the plications without having to call them from the server each

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Proteon: 'Let your bridges do the thinking'

BY JOANIE M. WEXLER

WESTBORO, Mass. - Proteon, Inc. sai it will forge ahead with its IBM internetworking plans today by enhancing its ers to ease configuration headaches, particularly among di local-area network topologies.

local-area network topologies.

The LAN supplier joins a pack of companies — including Cisco Systems, Inc., Novell, Inc., 3Com Corp., Wellfleet Communications, Inc. and others — that in recent months have addressed blending persnickety IBM Systems Network Architecture and Token Ring enviror

with the rest of the networking world. This trend has been fueled largely by IBM's progression away from hierarchi-cal networking toward distributed com-

puting.

Proteon said the major aspect of to day's announcement concerns the brids onent of its midrange CNX 500 nd P4100+ internetworking devices

Intelligent software turns the equi into one-size-fits-all bridges for linking Token Rings to Ethernet and Fiber Dis-tributed Data Interface (FDDI) LANs. said Gary Wood, senior marketing manag

The software - Adaptive Source

termine for itself what type of interconnection is needed among a given set of LANs as data is transmitted. This pre-cludes users from having to purchase and configure different devices for various LAN combinations, Wood said.

With this feature, Proteon is "look o address a more universal bridge tecl nology," said Charlie Robbins, director of ications research at Aberdeen Group in Boston For example, users today must m

ually configure source-route bridgin (SRB) schemes, required between Toke

Rings, alongside the translation or source-route-transparent (SRT) bridges needed to link combinations of Ethernets needed to link combinations or Ethernets and FDDIs and SRB-to-transparent gate-ways that link Token Rings to Ethernets or FDDIs. Adaptive SRT reportedly lets users install one Proteon bridge/router that figures out the proper technology for

each scenario.

Connecting dissimilar LANs is gaining attention as Token Ring infiltrates organizations alongside traditional Ethernet. At Alabama Power Co. in Birmingham. for instance, bridging between Token Ring and Ethernet is "currently an issue" until nonroutable protocols such as IBM NetBIOS and Digital Equipment Corp. Local-Area Transport are routable, th

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Cyrix faces Intel chip patent suit

BY MICHAEL FITZGERALD

RICHARDSON, Texas - Jousting with Intel Corp. for the huge 80386 desktop market is becoming common. But any-body who picks up the lance better also have lawyers, as Cyrix Corp. learned even before it announced its Intel workalike.

before it amounced its Intel workslike. Intel is using Cyrix, saying the latter's larle is using Cyrix, asying the latter's larle jatents (EW, March 30). The 25-MHz CX48SSLC appears to fill a hole in microprocessor market as a 16-bit chip that performs like a 32-bit 48SSX. and runs 486 microcode — shrunki down to be pin-compatible with the 38GSX. The clase has already taken a twist: Sources dose to Cyrix said that Texas In-

ments, Inc. will manufacture the chip for Cyrix and may put its name on the chips and resell th m. This complicate

chips and reself them. This completates the case because IT has an extensive cross-licensing agreement with Intel and the Dallas-based firm must that gives it the right to bail based chips in must that gives it the right to bail based chips. The complete is the right to bail based chips and the complete in the right to do it and to sail it," and F. Thomano Daniely, Intel's general consistent than TI taking a Copyria designs, interference in the TI taking a Gengin from Cyris and must layer their cross." "Immediately confirm the "Market fairer cross." "Immediately confirm the "Market fairer cross." "Immediately confirmed the market fair confirmit the market fair

was interested in having its own core mi-

undents in court against the guant se enductor manufacturer. Cyrix will "he a manquito harassin, el," said Jonathan Joseph, an ananye, Idder, Peabody & Co. Other analy aid Cyrix's chip was more likely to di go AMD's market share than Intel's. Cyrix claimed the new chip will out, orm a 386SI. by 2½ times and IB 386SI.C by 1.7 times on the Landra-wochmark.

James Chapman, Cyrix's mark or president, said that Cyrix is al-ipping sample chips to potential

ing sample chips to potentians and is targeting U.S. pe

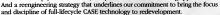


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ADVANCED TECHNOLOGY

TECH TALK

Teaming up

Tray Research, Inc. and one of its biggest customers, the U.S. Department of En-ergy's Los Alamos Laboratory, recently paired up to sign a cooperative research and development agreement sed on an Energy Depar ent model for cost-share ventures between govern-ment and industry. Under the agreement, Los Alamos and Cray will work to develop a more accurate oceanic/ atmospheric model for studying global climate change; reduce the cost of designing and developing ad-vanced computer chips by producing advanced software that will simulate electro-

magnetic wave effects in ul-tra-high-speed electronic devices; and improve compu-tational chemistry capabili-ties that are required to meet industrial needs to model large protein molecules con ing more than 1,000 at-

Super building block

Sanyo Electric Co. in Tocyo has developed what it claims is the world's first suams is the word is irst su-reconducting transistor, he part opens the door to a amatic boost in the speed of tegrated circuits without erheating them. Sanyo said transistor has a theoretical speed 10 times faster than cal speed 10 times raster that that of current semiconduc-tor transistors and consumes only one-hundredth as much electricity. One future application cited by the company is next-generation supercom

Fair-weather friend

The Taiwan Central leather Bureau will pair ar mpress Software, Inc. rel system and a Cray super-computer in its weather fore casting installation. The da-tabase is said to have been selected for its ability to store and manipulate data with no easily defined struc-ture, such as satellite data and ture, such as sateline data and images. Cray is supplying a Cray Y-MP81 system and an entry-level Cray Y-MP EL as a file server.

Peering into the future for free

U.S. Navy's package of computer models helps predict software reliability

BY GARY H. ANTHES

ware for a few thousand col-lars. Or you can get an integrated suite of 10 such sels from the U.S. Navy for free. While the government seeks ways promote the trickle-down of anoed technology from the tagen to the commercial

or Sorware (SMERFS) to government agencies, universities and corporations. SMERFS alows users to try multiple statistical models to see which one provides the best fit for the application in question.

The Navy uses SMERPS on the real-time software that guides Trident missiles, Farr said, but it is equally applicable in down-to-earth financial systems, for example. He said his latest enough to SMERPS came from a Colorado police organization that warred to assess its investigative nothing to the colorado assess its investigative nothing to the colorado assess its movestigative nothing to assess its movestigative nothing to assess its movelapitive policy movels.

in't fit," Farr said. He uses it to ate software that is under devel-at — to help decide when it can be sed — and to monitor the perfor-

theter said. We re consessed with qua-ity here, and we're always looking for ways to find one more error or to re-move any possible way a human can make an error in coding," be said. IBM does not use SMERPS to tell it

Corp. 's Windows.

Although SMERFS is a powerful tool, and the price is right, many organizations would not find it useful, Kellesaid. "You cannot use a tool lib. SMERFS unless you've had the fore sight to retain a good historical dat base."

New life envisioned for old Xerox PARC spirit

BY MICHAEL FITZGERALD



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According to Murphy's Law, nothing could look more tasty to a rat than the power cord of your most crucial computer. And when it stops running, there's bound to be gnashing of teeth. And not just the rat's.

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may have
figured on rats.

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EDITORIAL

Trench warfare

t was eerie last week sitting in on presentations by Compaq and Apple executives and hearing things I never thought I'd hear from

On selling direct to customers:
"We're looking at all channels." (Apple USA
President Bob Puette)

"Everything is being reconsidered." (Compaq okesman Bob Beach)

On profit margins:
"We are redoing our P&L structure to accom-

modate declining margins." (Puette)
"We will never see 30% to 40% margins
again." (Beach)

On competitive strategy: "[Our goal is] unit market share growth."

"Grow market share, especially in units."

Are these the same companies that have long shunned direct sales to corporate users, charged a huge premium for their products and lived off the giant shadow cast by IBM's price umbrella? No. Apple and Compaq are very different compa-nies today, fighting a trench war against a new buyer perception that speedy hardware is no

buyer perception that speedy hardware is no longer such a big deal.

There are huge opportunities for IS management in this strategy shift. Combined with IBM's arew emphasis on the low end and rumered moves into clone sales, the message is clear that the market leaders are willing to do just about anything to get your business. They're dealing on price, greatly expanding service and support and hanting that tuboos such as direct and even mailorder sales are an option.

We often hear from industry executives that we orten near room moustry executives that the "commoditization" of the PC market is a tragedy. Tighter margins mean poorer quality, fewer niceties for customers and less money for R&D. The customer will suffer, they say.

A good old-fashioned price war is just what the industry needs right now. Companies that can't deliver quality products at a reasonable price will go out of business, as well they should. New vendors such as CompuAdd, Austin and Hyundai are emerging on the strength of superior products

If you want an example of what "commoditization" can do, look at the consumer electronics industry. It has endured 20 years of rabid price competition, but that hasn't prevented custom-ers from having access to stunning new technol-ogies year after year. Nor has it prevented new

vendors from entering the market.

Compaq, Apple, IBM and others will emerge from this market dislocation wiser and probably stronger. They will certainly be more focused on delivering better value through more channels. That's a change everyone can applaud.





LETTERS TO THE EDITOR

in NIST case studies in order to

NIST report did not endorse products

Regarding "Uncle Sam enlisting aid of software re-engineering" (CW, March 2), the purpose of the National Institute of Standards and Technology (NIST) re-engineering case study was to evaluate the applicability of software re-engineering for federal re re-engineering for federal erament users. NIST Special dication 193, "Software Re-ineering: A Case Study and soms Learned," documents findings and provides recom-nidations for those consider-

ing re-engineering.
It is NIST policy not to dis

in NIST case studies in order to avoid comparison among the products used and other prod-ucts on the market. Your report-er gained knowledge of the tar-get environment and computer-aided software engineering tools from a source outside of NIST. Mention of the employed prod-ucts in your article does not im-ply recommendation or disap-

Mary K. Ruhl Mary T. Gunn U.S. Department of Comm

Gaithersburg, Md.

the name of products user Bank should reinvest in its customers

Mellon Bank NA Vice Chairman W. Keith Smith [Letters to the Editor, CW, March 16] states "Mellon is committed to ingthening its position as a or provider of outsourcing vices." Great! But what services, Greati But what about Melion's commitment to its individual banking customers? As a longtime customer of Gi-rd Bank, which is owned by n, I am still waiting for a

I suspect that most of us have been "Fed up with bad direc-tions" [CW, March 9] at one time or another, but we also tend to develop a tolerance for poorly written manuals. The prevailing attitude among vendors seen to be that users pay for capabili-ties in the software, not the man-

In response, a new mar niche appears to have arin enting inadequate ven-

by-phone and Money Access Card automated teller systems. Every time there is a problem, Mollon "customer service" al-bis with, "It is still only a batch system."

I hope Mr. Smith devotes some of that technological rein-vestment be talks about to providing competitive services to his individual banking custom-ers. Ian't Mellon still a bank? Georg U. Simon Glenzide, Pa.

Poor documentation begets new market

dor documentation. I offer as ev dence the burgeoning shelve dence the burgeoning shelf dedicated to computer subje-at the local bookstore. I wo like to think that the surfeit in cates the versatility of the vi-ous programs, but more likely shows the dearth of clear

Into the future

Charles Lecht is a braver person than I ["Were my predictions on the mark?" CW, March 16]. I don't have the courage to rev any prediction I mi have offered a decade a

have offered a decade in general, his preser proves frighteningly: rate—with the post exception of the predictions of Cobol.
"Cobol demise-olics" just miss the person of the prediction of the

ard D. W Catharpin, Va

Computerworld netcomes comments from its readers. Letters may be edited for brevily and clarity and should be addressed to Bill Laberis. Editor is COMPUTER COMPUTER (2015). The support of the computerworld, P.O. Box 917. 375 Cochitucter Road, Francisco ham, Mass. 01701. Fax number (508) 875-8921. MCI Mail. COMPUTERWORLD. Please de a b



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Tear down the voice mail jail

My company,
First Union
Corp., has been
in the news quite
s bit lately be-

cause of a memo written by our animum and CEO, Ed Crutch eld. Ed didn't appreciate the ay his phone call was treated hen he tried to reach a senior amager and got a recorder resource included.

ressage instead.

His nationally publicize
neme on the subject ended with
the punch line, "P.S. The ner
time I call and get an answerin
nachine, we will be minus on
the subject of the subject of the
times on the subject of the subject of the
Ed needed to reach that man

ager, and technology denied him the opportunity. His requirements were not met. Ed's dissatisfaction caused us

Ed's dissatisfaction caused us to take another hard look at how we were implementing voice messaging technology. The volume of positive responses that flooded our offices in response to the publicity about his mem suggests to me that many of you ought to be doing the same.

rien and look spend countiess hours tr get people to tell us what t

well.

Futurist Joel Barker would I
us off the book s little by tellius that our old paradigms blius to new ways of doing things.

plement voice messaging sys tems with a lack of customer ap

precision.

We have all experienced the frustration of entering the en

support we were receiving fin a highly touted vendor of far tolerant computing systems couple of weeks ago. Whet tried to call the local office found myself in voice mail juil. ter numerous attempts to en tricate myself, I called the mentional office, where

cate myself, I called the local office, which we have a carried to the local office, where the local office, which is local to local the local office where the local office of the local

have and ammised to set m

phose and promised to get me someone right sway. He called back about 20 minutes later, more angry and fruntrated than I was: He couldn't break out of voice mail jail either. Whose requirements got satip-

Customer turn-off
Poor implementation of voice
mail sends customers the message that the service provider's

Many information proc rolessionals, helped by the rolessionals of the control of the roless succeeded in selfin

Count.

Eager to squeeze costs out of the organization, many sent managers have signed up — and shot themselves and their organizations squarely in the foot by constitutions implementation.

new paradigm that uses tech plogy to improve customer set faction.

Properly implemented voi nessaging systems are power tools that enhance the productivity of both callers and call it

We me those tools far our 24hour customer service lines and selected internal staff departments at First Union, and they work well. The reason they work well is that they offer the calient the choice of talking to a bamma being and, union many implementations, you don't wind up with the designated telephone answerser's woice mail.

One of the often discussed opics in these pages, and a coning focus for information processing professionals, is the struggle for significance in the oversignation.

We are often perceived a "techno-nerds," out of step wir the businesses we support, pu suing technology for technoogy's sake rather than pursuin technology that supports the business' objectives.

The message in all the recent hoopia about voice messaging is clear. Those of us who implement these systems for a living need to change our paradigms and implement them in a fashion that enhances our ability to espend, rather than continuing to implement them using our old answering muchan model.

Failing to do that, we will have lost yet another opportunity to gain that respect so many crave and so few achieve.

Mattergly in senior vice president, director of telecommunications at the Fire Urson National Bank of North Carolina.

The real facts about those pesky viruses

PAUL GILLIN

The recent Michelangelo virus has got a lot of you concerned about how susceptible you are to virus infections.

ceptible you are nos. Michelangelo was a very ricous threat. We now know for fact that Michelangelo infected 3,390 PCs. It's true. We were did that by a genuine Market essearch Firm with letterheas de everything using statistical solidate sources that you can produce to morrow with a hor follower.

As one who narrowly encaped mahilation at the hands of the irrus by wisely forgetting to turn in my PC that day, I feel it's my tury to put your mind at rest with these answers to the Most

commonly Asked Questions
bloot Viruses, which I made up
syself. Follow along at home:

2: What is a computer virus is a mast;
indepical thing that starts in a
computer and spreads to nearby
scole, turning their organs into
things like "Night of the Living

Ha ha ha. That was a litjoke for the compoter libtera among you, who are busy checing yourselves into hospittight now while the rest of us a having a knowing techno-ches to the proper wire is marty little reque program cree of by the pinnply-faced hid acro the street from you who has

saty little rogue program creatdeby the pinniph-deed led across the street from you who has no triends and spends his evenings slotting ways to make you miserable because you stiffed him onthat lawn mowing job last samner. For creating this virus, be really swel purished by being hired really swel our corporation into some Q: How do evel job like vice president a compute reclopment — i.e., your A: Gene

Q: How do I avoid getting a computer virus? A: Whatever you do, don't put any disks in your PCI I mean it. Put a plastic bubble around your PC and don't even go near it. Better yet, just leave it in the box.

Absolutely no floppies If you really must use your PI don't introduce any floppy disk into it. If possible, you shou program everything into you computer yourself in bina code. Unfortunately, this optic is only available to people will lots of spare time on their hand

If you absolutely must use loppy disks, buy one of the very ine antiviral programs that are currently out on the market. The sest ones are those that you'll find advertised in this journal. The people who make them are ally swell, too.

How do I know when I've got computer virus?

Generally speaking the

warring tigns of a computer ray infection are when your I starts doing something it's supposed to do, like picking reruns of "Let's Make a Dea This usually precedes some lof of catastrophic event like repling your apreadsheet files we those of the PTL Ministry.

I should point out, however that most computer viruses are intended to be "famey" and may do sothing more than pap us whinsical little messages like "want cookie" or "Happy Berth day, Joshi" before turning you hard disk into acrap metal. Qr Are computer viruses a pass ing phase, or are they here to

A: I really can't answer to puestion. You'd better go a our boss, The Romalan love

lin is executive editor of Computervid, but he wants to be humorist Dave

This printer will still be productive when Michael becomes computer manager.



Facit's new volume printer, the Facit E950, is designed for really demanding applications. It handles round-the-clock operations at 320 lines per minute and features Facit's new FlexForce print head which can produce over 1,500,000,000 characters (that's 1.5 billion!) with no reduction in print quality.

The 8-part form handling is characterized by excellent print quality on all copies. Furthermore, the E950 provides advanced paper handling including on-demand forms delivery. And, unlike other printers, this one is so easy to use, it's child's play. All functions are controlled via just two keys and an easy-to-read LCD display.

That's just the beginning of how the Facit E950 can make you more productive. Get all the E950 facts and our new "Tough Printers for Tough Applications" booklet. Write Facit, Inc., 400 Commercial Street, Manchester, NH 03101-1107. Or call 1-800 TFW-FACIT 6800-879-32241 for immediate assistance.



Tough Printers for Tough Applications

DESKTOP COMPUTING

COMMENTARY Michael Fitzgerald

Going down in history

Windows 3.1 cleans up some old flaws

BY CHRISTOPHER LINDQUIST

Old world meets new in optical storage project

BY JAMES DALY



Microsoft overhauls Powerpoint tool

BY CAROL HILDEBRAND

The graphics release is part of lits of Windows products that creeoft is announcing in con-ction with Windows 3.1, in-ding Excel 4.0, C/C++ 7, densional Tools for Visual Ba-and a TrueType font pack-

Old world meets new

FROM PAGE 35

A major part of the operation also included a separate document-examing room where a double-shift operation uses 15 scanners to scan and store the images. Once the thin is record-write-once optical dise, if cannot be altered or erased, providing the library with the security and archiving solutions it needs. The project was designed and developed by the Spanish Minister of the control of the security and the Room Archiving solutions, a private or ganization, a private or ganization.

Windows 3.1 cleans up old flaws

en multiple instances of drive adows, allowing for easy drag d drop transfer of files among ves and directories. Windows 3.1 includes more

have limited applicability owe spot trays become with an application take advantage of them. For example, Windows now supports a variety of sound and video devices, including microphones and sound boards. OCE is also built in, but leve and Carellife do. The supports a variety of sound and graphics can be enable of the control of the

Windows clip art introduced

Meet the Notebook that Breaks the Mold

At just 6.1 pounds, SPARCbook 1 is light enough to carry comfortably and small enough to fit in your brieflasse. Yet incorporates the same power of the world's most popular desitony worknations from San Microsystems, including; a SPARC MISC processor sustaining 18 MIPs, 8 to 32 MB of fast DRAM and up to 240 MB of disk space.



Now you can run SPARC and DOS-compatible applications unmodified—anywhere. SPARCbook ships with SunSoft's Solaris 1.0.1 SPARCbook Versi operating system pre-installed and enhanced for uting system pre-installed and enhanced for able operation, while SoftPC MS-DOS emulation is offered as an option.

In the office, SPARCbook is a powerful desktop work-station. It connects to your corporate Ethernet network and supports VGA or Super VGA displays for big-screen color graphics and VGA projection units

On she read, it travels with you to busi On the read, it travels with you to business meetin and into the field for sales, service and maintenan calls. SPARCbook's innovative MouseKey integri the convenience of an external mouse into the key board. An internal 2400 baud modern with Sendi ability puts you in touch with informat role at the office—or around the world.

M HAT : 85" : 1.9

A spheticiated power management system maximizes the life of your battery, ensured data integrity and arvest min. For less demanding applications, you can conserve battery power by switching the processor's speed from 25 MHz to 125 MHz. The automatic SAVE and RESUME function safeguards your system from unexpected power down and eliminates the need to boot the system when you switch it on.

Tadpole's limited marranty protects your productivity with toll-free technical support and prompt hardware

SPARCless I is the only workstation that offers the performance and versatility you need—whether you're in the office or on the move.

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Fitzgerald

CONTINUED FROM PAGE 35

CONTINUED PRIME PIECE SO CONTINUED PRIME PIECE SO COULD BY IN GOOD CONSISCION— THE LANGE STATE SO THE PIECE SO CONTINUED TO THE PIECE SO CONTINUED T

ble market.

On the features side, IBM's products do not look like superballs. None of them offer impressive battery life, although perhaps IBM, in billing them at 1½ to two hours, is simply more honest than other vendors (or-

BM CANNOT SIMPLY say "Hon-ey, I'm here," and expect people to come rushing over and buy. It must do more than simply get something to market.

dinarily the claimed battery life should be cut in half, so one better hope IBM is simply honest). The Micro Channel Architecture will not win points for these systems, though it probably will not hurt — the bus is a small insue on the northiste force.

not hurt — the bus is a small is-sue on the portable from. The N51SX notebook, IBM's avowed low-end entry in the 386 notebook market, gets barely a me-too product vote from observers, with a slower (16-MHz) version of the 386SX processor than is found in the typical notebook. It has little beles a distinctive case to differ-

tiate it. The N51SLC has the IBM-The N51SLC has the IBM-designed SLC chip to recom-mend it. But three mooths from now, when IBM ships the N51SLC, its competition will be pushing comparable perfor-mance notebooks using Intel's 25-MHz 386SL. These competitive systems will likely offer much longer battery life, too.

Northing new The CL57SX, as 11-pound por-table, will have a great color screen, but true notebooks with comparable screens, longer battery life and similar pricing are already shipping from e-spectable venders used as To-shiba and NEC, with a half-dozen others heading for market be-

M's products, then, cer-

tainly put the company in the marketplace after years of not being there, but they may get swallowed in a ferocious mar-ket. For bounce, IBM cannot simply say "Honey, I'm here," and expect people to come rust ing over and buy. It must do more than simply get somethin to market.

market. IBM desperately wants to sunce; observers speak of deep thoroughly unexpected means low prices. Pricing on the note

how to position these products to make them attractive to buyers. For example, the N51SX was delayed for perhaps aix was delayed for perhaps of the norths as IBM agonised over what to do with a 386SX notebook that clearly did not meare up to the market. It may have done that, via a

books is hugely aggressive for BM, and it falls toward the middle of the notebook market. Some speculate that Clans-vino's control over pricing, do-tained in the massive BIM reor-ganization in November, generated this, and he may be able to parisy what's left of BIM's same value into in-creased sales among people who have spurned it.

This will most likely be a alow bounce. The products are not so much better or no differe ent or so low-priced as to bright large huge pieces of the market to IBM. However, if the company executes well, the combination could help it bounce like Bumble and not like a "bumbler."

raid is a Computerworld sen



NEW PRODUCTS

Macintosh

Radius, Inc. has announced the Radius Rocket 33 accelerator board for Apple Computer, Inc. Macintosh systems.

The board is based on the Motorola, Inc. 33-MHz 68040 pro-

ics acceleration software, includiaced system softwintains compatibility. Radius 1710 Fortune Drive San Jose, Calif. 95131 (408) 434-1010

Software utilities

Epson America, Inc. has reduced the price of its ES-300C color than 1,900 terms are Versions for DOS and oft Corp.'s Windows are

The scanner now costs \$1,399, down from \$1,699. The

Terrance, Calif. 90509 (213) 782-0770



Logitech, Inc. has announced a new version of its TrackMan trackball input device. The ergonomic design of the trackball is improved, the com-pany said. It is hundled with utilise that allow uners to assign but key values to the trackball but-

It is priced at \$139. Logitech 6505 Kniser Drive Fremost, Calif. 94555 (510) 795-8500

POC-IT Management Ser-Inc. has announced a versi MicroMan II for OS/2 2.0. MicroMan II is a project ent Servi

MicroMan II is a project and staff management software sys-tem. The company and the OS/2 2.0 version offers increased per-formance over the DOS version, in part because of OS/2's larger memory models.

The price of the system is \$2,895. POC-IT Ma

Services Suite 460 429 Santa Monica Blvd. Santa Monica, Calif. 90401 (310) 393-4552

Check out the Marketplace Pages on Page 127.



Or How AT&T SYSTIMAX PDS Gives More Promise To Your Premises.

ATRE SYSTIMAX® Premises Distribution System gives you ART SYSTIMAX* Premisics Districtation Systems gives the capability to scene societies, vision, have been in your building. Through its single submitted, a Aprillance in your building. Through its single is compared to the control of the control o

. AT&T Network Systems And Bell Laboratories. Technologies For The Real World.



ALR's PowerPro VM: Flexible, powerful

Technology Analysis — A roundup of expert opinions about new products. Summaries written by free-

dvanced Logic Research, Inc.'s PowerPro VM is a flexible, modular 1486-based Extended Industry Standard Architecture (EESA) system with enough power to drive a 32-node network, reviewers.

arrive a 32-soce network, reviewer reported.

Parformence: The system's soli speed comes largely from its 256h byte, direct-mapped, write-back processor random-access memory cach, it also comes standard with 5M byte of RAM on the system board, expan-

some to synt system. Eases of uses Although the multude of options may seem confusion components are accessible and cofiguration is straightforward. Designer The system has eight 3 bit EISA slots, two 16-bit XT/AT be slots and two proprietary slots for the more search care.

port is not free and is easy avas weekdays. Even then, reviewe technicians are tough to reach Volue: Flexibility does no cheap. Adding options tends cost. The base model, with 5h of RAM, a 256K-byte cache ALR's PowerPro VM

Reviews	Perfectments	Easts of use	Design	Service	Velue	Qverail
PC Magnine 3/17/98	Solid	Versalle	More than except expension	Reliable options	Pair price	Good networking
Byte 5/91	Outstanding CPU	Flexible	Modular expandability	NC	Presiden price	Lowend of premis
2/34/92	Excellent	Very good	Very good	Good	Very good	85"
Heart	A Company	Land I	A CONTRACTOR	-	7.41	1
Stay House, Stone Manufacturing Co.		==	**	==	=	Could improve power supply
The McDermot, RA Monter, Inc.	-	L	-	FLOR	L	Occasional parity errors
Analysis	4	5	100			
Phil Magney. ARS, Inc./Workstution Laboratories	- 11	1.	l.	L	l.	Lots of expansion options
Jury Cores, Facilities Technical Reports	L		L		L	Lichting in curving
John Dunkle, Workgroup Technologies, Inc.	- 11				=	Needs to focus or service and suppor
Charpt Carolid, Carolida Co.	1	L		70 . 73	190	Army year

Vendor financial ratings

Analysts	Long term	Short-term performance		
Joe McGlone, McGlone & Co.		100		
Jim Poyner, Rauscher Pierce Lebnes, inc.				

ALR responds

provide and support in the past few months ere's been a tremendous effort by ALR to up and response. As of March 3, we offer an 800 miner for technical support. We are increasing number of people on the support team. We have it in a fast-tech fax response and a 24-boar bulleboard and the support team.

Everex's Step Cube: Reliable, expandable

Reviews	Parformance	feso of use	Design	Service	Vefue	Overofi
PC Magazine 3/12/82	High-powered	-	Highly	Extended off-site	Not change	Appending count
Interestal 2/10/98	.Fine speed	Exceptional expendability	Insorotee	NC	Very competitive	Server product or the year
PC World 3/91	Part lets of options	Eury access	Paterielle cube	NC	MC	-
Users						
Jan Louise, Jacobs Engineering Group, Inc.	- #	-				liciable
Heat Phone, Hiroth Dender Associates			-		PERM	1725ciret
Stars Marks, Electronic Data Systems Corp.	- 12	**	-			Fits well into all feet conferences
Analysts						
Cheryl Cieráli, Cierál à Ce		-				Marie of the case
Phil Magney, AICi, Inc./Workstation Laboratories	1	i.	i.	1.	L	Average
Storry Comm.		1	L	1	100	Prices

77 To Surge good of Control of Co

Vendor background information

1902 revenue of 1328 million, a 698 increase from 992 million for the same quarters had year. Not atoms was \$1.17 million compared with a net loss of \$150 million for the same quarter last year. Finencial snelty this Payeer of Rauccher, Pierce, Lettines, Inc. reads Everach short-term performance as poor and long-term stability as fair.

Everex respond:

pt) Bruce, bunness systems product manager: Performance: We are consistently one of the faster 486/33 systems available. The second-level cache brings it up to the fastest level of performance, but not everybody uses it. Venues: Although the Cube 486/33 is not a lowend machine, we feel that it has a very connectitive end machine, we feel that it has a very connectitive unique design males Everex Systems, Inc.; Step Cube 1486/33 computer stand out from the crowd. Positioned as a file erver, the unit makes up for what it does in speed with reliability and examine, according to reviewers. We forward to the control of the control

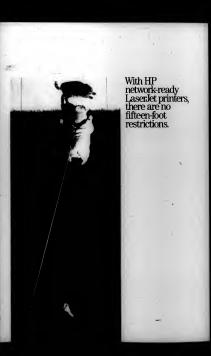
stry Standard Architecture sysm, based on a 33-MHz 486 microoccasor, has average speed and ower for its class. It is Novell, Inc. et Ware-certified.

vides easy access to all slots and memory cards.

Designs Named for its shape, the approximately 16-in. wide Cube has drives on one side and slots on the oth-

There is a unique and effective obling system. There are 12 slots on a motherboard — one is an 8-bit I/AT but slot. There is also support up to 64M bytes of 32-bit random-cost memory. There are four accessles and four internal 54-in, half-ight drive but.

one-year warranty that includes free on-site service, builetin board support and extended support hours. Value: The Everex Stop Cub-486/33 distinguishes itself with unique design features that provide excellent expansion, case of use and witability. A basic configuration with





And, best of all, you can manage your entire printing network from where you sit.

Introducing HP network-rea

Nowadays, users need and demand more from their laser printers than simply great look ing output. They want speed, control, and convenience. They look to you for answers. And you can look to us for solutions Introducing the next standard for network printing: network-ready LaserJet printers from Hewlett-Packard. Equipped with HP JetDirect cards (purchased separately), the LaserJet printers provide you with location flexibility. Improved performance. And greater hardware control.

Unleash your LaserJet The wait for your printers. output is over.

printers.

Now you can forget about tethering your printers to some farmway server. Network-ready Laserale printers can be placed anywhere along the network. Just plug a networkready Laserale into a network as you would PGs and you're ready to not! Since you're putting machines by your users, on the network their own personal printer.

The commentace is the neutile. With network-ready LaserJeta, your printers will redefine speed. By pulling data directly through the network interface card, network-ready LaserJets avoid the parallel bottleneck

personal printer.

The convenience is the result of HP JetDirect interface cards that back for a Jaset Let printer. Installed in a matter of minutes, a JetDirect card becomes a part of the printer itself. Without the hasked and uncertainty of extra black boxes, wires, and power cables. And without the sluggisthness associated with software solutions.





ady LaserJet printers.

Watchdog your entire operation.

In addition to increased network-ready LaserJet network ready Laserlet printers give you increased control. You can monitor and troubleshoot the entire print-ing network without leaving your deak. There's more. Your printers become nodes. Which allow you to take full advan-tage of the features in your tage of the features in your network management soft-ware. And now every LaserJet printer on your network will have a built-in diagnostic feature to help you trace the success or failure of data

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LaserJeels. The best part is that your new or existing HP LaserJeel III, IIII, but the comment of the HB leaserJeel III, IIII, but the HB JeelDirect and into your HP LaserJee printers I/O slot and connect to your existing LaN cabiling, And now, for a price between \$606-8905, each LaserJeel can be net-worked with a JedDirect cand:

To discover how simple and varied network solutions can be, call 1-800-752-0900, Ext. 3072 to receive free the HP Connectivity Solutions Guide and the name of your nearest LAN-certified HP dealer.

HP LaserJet Printers.

IBM LAN Ser

HP-UX

SCO UNIX

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rm King (4/16 Mbps)

Diserret 802.3 Ethernet 802.3

PACKARD



HP Laser Set IIID



For a how-to source that provides information on hooking your Laserdets into your mainframe, mintoned the first pour mainframe, mintoned the first pour mainframe, mintoned the first pour mainframe first pour mainframe first pour mintoned first po

WORKGROUP COMPUTING

LANS . SERVERS . SOFTWARE FOR GROUPS

HP gathers some allies for PA-RISC

BY MARYFRAN JOHNSON

adow, no one is surprised sese days when computer ven-ors seek refuge in industry alli-

ances or copy consortia.

So it was rather ho-hum news when Hewlett-Packard Co. re-

TI chip paves way for network-ready PCs

PCs that plug into Token Ring and Ethernet expected within year, thanks to dual-protocol silicon

BY JOANIE M. WEXLER



Banyan brings graphic

simplicity to Vines 2.0

MUM MUM GRIM MINE

COMPUTERWORLD

Enable 4.5 application package ships

BY ROSEMARY HAMILTON

Chip paves way for netready PCs



"Don't reduce your technology costs in such a way that they can't continue to be reduced. The last thing you want is to save budget dollars today at the expense of mortgaging your future.

"With the right strategy, it's possible to continually reduce your costs. Is your current strategy letting you do that?" To find out, use the market as a yarditick. Compare what's been happening to your expenses over the last few years with market trends. Then look at what's likely to happen in the future. That II tell you the answer real fast.

"Every good technology strategy is built on a sound financial footing. That takes market wledge and creativity. And that's where Comdisco excels.

"If you're not sure whether your strategy measures up to the realities of today, talk to us. We'll show you some smart ways to solve your problems, and we'll save you money. That's Comdisco's job, and nobody does it better."



COMPLICO



Wyse Decision 386/40 blew by all other PCs tested on Microsoft Word.



Of course, if you work on Excel, you probably couldn't care less.

Hewlett-Packard gathers allies for PA-RISC

sed in one of HP's Cupertino, Calif., gs, with Jim Bell, an HP vice presi-

in a meanty gotten involved in a of technology trading, and PRO is real-set a more formal agreement to make leasier," and Ted Krum, an analyst at I. Brown Associates, Inc. in extensive technology sharing ement between "".

Court there."

That means attracting many oftware vendors to the PA-RISC ecture. There are roughly 4,000 as ions available under PA-RISC noet on them on HP/UX, HP's Unit

Per software venezione sinchiane (Art. Per software venezione, a standard su plication bismy interface menso having i suna T. Mai. Crasia na mer opportunity for suna T. Hai. Crasia na mer opportunity for travita venezione di propositi di suna propositi di propositi di suna suna suna suna suna per sono di propositi di travita di

Norma. A significant missing link in the PRO lineup is a vendor focused on portable or laptop computing, analysts noted. HP in-tends to remedy that soon, company offi-cials said, adding that the nine sponsors are likely to grow their number eventual-ly to a dozen or so.

Sun, DEC boost 3-D graphics

■ Three-dimensional graphics systems recently got a price cut from Sum Micro systems, fin. can a performance boost from Digital Equipment Corp.
Sam weighed in with price cuts of up to 39% on various memory and monitor opinions for las high-end 3-D graphics workstations. The SPM-Catation IPX and SPM-Catations ZoX workstations and SPM-Catations ZoX workstations 30.5 for the IPX and \$19,450 for the SPX and \$19,450 for the ZoX workstations.

graphics products for its VAXstation E with two new options, SPXg and SPX, to upgrade existing VAXstation 4000 Model 60s:

Purchased separately as upgrades, the graphic subsystems cost \$6,995 for the SPXg eight-plane version and \$11,995 for the SPXgt high-performant 24-plane version.

SHOgraphies, a start-up graphics firm, has amounted that its PEXtk grap ics library is available free of charge in the Massachusetts Institute of



Some floppy disks are engineered to save a little money. Dysan 100 disks are engineered to save what really matters. Your data. We test 100% of our disks and certify them 100% error free. Now they're pre-formatted, too. And they come in a smart new plastic storage box that saves on packaging waste. So save your valuable data on Dysan 100 disks. You'll breathe easier.



Wyse left every other 386/40 in the dust when running Excel.



- Which means little to you if you deal mostly with dBASE IV.*

Network auditing package beefed up

BY JIM NASH

netering capabilities. xr 386 takes 25K (bytes) of said Linda Yee, network adnemony," and Linds liee, network ad-inistrator at the Economic Diversifica-on and Trade Department of the prov-oc of Saskatchewan in Canada, "That's of a lot, but we had to bring in high-mem-ry managers. We didn't know that 25k syteil of memory was enough to impact us, but on some [PC] applicat caused us grief."

Currestly, the department rust tor 386, the application's older site each of its 175 personal comput-five file servers.

Basing LT Auditor on the

roy at the University of texts reason Sci-ence Center in Houston. As a Net Ware module, McElroy said, "it's loaded when the server is booted up" — not every time a new PC is added to the center's current 32-workstation, one-server net-

Wavetracer links Zephyr, HP series

With the addition of the HP interface svetracer systems now employ a vari y of Unix-based workstations as from

MARYFRAN JOHNSON



ions for UNIX, you know one thing for sure: The backlog can be backbreaking. So in the spirit of helpfulness, we or you the perfect answer

Chase Actually, we offer you two ways to cheat. Which is twice as good. And both involve uniVerse by VMark. Through VMark Software, you have access to approximately 4,000 proven, industry expertise, for a broad range of vertical markets, including distribution, manufacturing, financial, government and health care. And uniVerse lets you run them on over sorty platforms from virtually every manufacturer in the world.

So you can have the application you want, when you need it, and on the

The second route to fast UNIX

believe, the easiest application developm ant in use today. And the applications you build will be able to take full adventage of all the benefits and freedom of choice that make UNIX and open systems so attractive. VMark. Think of us as business tions for UNIX. To go.

COMPUTERWORLD

uniVerse by

Wyse also won the dBASE IV test. See a pattern yet?



This may look like an ordinary computer, but inside beats the heart of a Lamborghimi.
The Wyse Decision 386/40 outperformed all other tested at the independent software time trials or

others tested at the independent software time trials conducted by the National Software Testing Laboratories.

In other words, we're not only faster than a 486x/20, we're also faster than the other 386/40

personal computers.

And now that you know all 386/40s aren't created equal, we'd like to tell you why.

Obviously the 40MHz, 386 microproces-

sor is just one element affecting overall system
performance. You've also got to factor in the interplay between
the Wyse high-performance disk, video and memory subsystems.

The souped-up 128KB memory cache and the WY-470 Super VGA video adapter are just the beginning. The Wyse Decision 386/40 also runs a turbo-speed ISA expansion bus at three speeds-8MHz. 10MHz and 13.3MHz.

But nothing we can say in an ad is as convincing as the body of independent NSTL testing. After all, the Wyse Decision 386/40 placed first in five software time trials you haven't

Read the tests. Then

see if you don't agree the Wyse Decision 386/40 smokes the competition.

For your complete copy of independent 386/40 tests, call 1-800-GET WYSE.

NEW PRODUCTS

The TPair-426 (\$465) is a

at, 6-alox AT/XT card. It is patible with Novell NetWare NetWare Lite and includes tegrated NE2000 interface, the TPair-406 (\$325) is a face. The TPair-410 (\$175) anion card in intended to be liked with our of the card

installed with one of the other

to a thin or thick Ethernet net-

work. Intellicom 20415 Nordhoff St. Chatsworth, Calif. 91311 (816) 407-3900

Kansai Electric, USA is current-ly shipping parallel versions of its expandable printer buffers. The Kwik-Stor buffers offer capacities from 256K to 8M

bytes. Kwik-Stor features a copy button that allows users to re-print the contents of the buffer without resending the print job from a personal computer. Pric-ing starts at \$249.

The company has also an-mord ModuLink (\$129 each for transmitter and receives modules), a printer-sharing sys-tem that connects up to six com-puters to as many as four print-

via standard telephone ms, and QuadLink (\$179). ar automatic printer-sharing de-vice that connects up to four

005 Hamilton Ave. San Jose, Calif. 95125 408) 377-7062

Gilbert & Associates, Inc. has announced Views 2.0. Views 2.0 is a document man-agement system for networked Lotus Development Corp. Arm Pro 2.0 users. It allows users to ocate files and conduct database

View 2.0 also lets users find documents stored anywhere on the network without knowing the location of the file or the the DOS file name. It supports Lo-tust Notes and CC-Mai. The price is \$395 per node. Gilbert & Associates Suite H 875 Via de la Pax Pacific Palisades, Calif. 90222

(213) 454-7679

Intel Corp. has introduced LAN-Protect, a server-based software utility that protects local-area networks against viruses. LANProtect installs as a NetWare Londable Module un-der Novell, Inc.'s NetWare net-

r Novel, Inc.'s NetWare net-not operating system. It recog-tes more than 850 viruses, the mpany said. It provides on-de-and scanning of individual net-rot nodes without requiring a minate-and-stay-resident agram at the node.

Data storage

Global Service Bureau has an-nounced the availability of the GSB 6000 mass-storage subsys-

The GSB 6000, based on re-undant arrays of inexpensive sids technology, is intended for see workstation and network file erver markets.

It offers from 6G to 40G yttes of storage capacity, atta-tes to the host via Small Com-tret Systems latertance2 and towides fault tolerance through utsighe power supplies and re-ornable find drives.

Pricing starts at \$48,200 for four-drive, 6.4G-byte configu

ration. Global Service Bureau Suite 304B 3700 Newsort Rivel (714) 673-9413



of IBM° AS/400° equipment, now provides a full range of storage devices that can help you achieve faster, safer, more cost-effective access to data.

For all of the exciting technological advances made in the IBM midrange computing environment in the last five years, there has been virtually no change in the way data is stored. L'atil non We have new tape and DASD subsistems that offer

performance choices never before available to the AS/400 user. Tape products include 8-mm, reel-to-reel or cartridge DASD products feature built in hot spare and each technology. Our new disk array product, called Alpine, is simply the best new idea in continuous data availability for the AS/400 user And this is only the beginning of a new storage growth path that XL/Datacomp will provide for the IBM madrange user.

ce you to more cost-effective data access through our philosophy of Data Storage Management (DSM). DSM shows you how to store data on the type of device that ides the best level of performance for the type of data being stored, making your overall storage emice a missare of high-speed alternatives for high-speed need critical tasks. As we make new alternatives such as solid state DASD and automated tape library systems available you will want to have a strategy in place to take advantage of each option

To find out more about the new XL/Dat ne of storage devices, or the ways you can put DSM to work to improve the access and co ectiveness of your data storage, call for the FREE booklet "Guide To Effective ta Storage Management."

Call 1-800-323-3289,



StorageTek



White Paper

SOFTWARE PIRACY



Door readers

Software piracy is a critical problem in the computer industry, It's estimated that last year illegal software copying cost companies over \$10 billion worldwide—vital funds that would go a long way toward keeping the industry healthy and innovative.

go a long way toward seeping the industry neathly and innovative.

Ultimately, software pinely hims everyone. For one thing, developers lose money that
they could use to improve products, documentation, and support for their customers. And
whenever developers can't afford to linest in new ventures and markets, innovation and
product availability are hindered.

When you buy legal software, you receive more than floppy disks and manuals—your purchase is a vote. It's your way of rewarding the hardworking team that created the great software. And it's your way of enabling them to produce even better products in the future.

Apple is a strong supporter of the computer industry's efforts to fight software pixery. We reducted time, money and resources to industry requires belof solve the process. We reduce the most part of the pixer to the process and customers on the legal use of software. Our most cere efforts include several pix projects with the Software Politics Association and the Business Software Alliunce. And we're extremely pleased to be a sponnor of this SR4 white never on software reduces.

We want to make sure our customers always have access to the best software products in the industry. Software piracy threatens productive and limovative developers, and Apple wants to take an aggressive approach in addressing this problem—because stronger software developers mean better software for everyone.

John Sculley

Obairman of the Board

Ohief Executive Officer

Introduction

Software piracy is a topic that makes lots of people uncomfortable. It makes them uncomfortable because they know if they address the topic honestly, they will end up looking bad. The fact is, they nay end up confronting the spectre of their own criminality. Imagine that.

And while you're imagining that, imagine a posse of U.S. manshals knocking on your door and coming in to take a look around. Imagine what might happen to you and your company if they found out you were a software pirate. Imagine fines as high as \$100,000 per copyright infringement. It's not a very pleasant fantasy.

Is this awful scenario the kind of thing that only happens to someone else? Don't count on it. The Software Publishers Association (SPA) and many software vendors are taking to the streets with a vengeance to bring down the pirates they feel are picking their pockets. It could happen to you.

But, you say, making illegitimate copies of simple software programs just doesn't seem wrong, any more wrong than using an office copier machine. What it seems is easy. And how could anything so easy, so inviting, be wrong? It might be tempting to think about the situation in such simplistic terms, but the reality is also easy to grasp; you break the law and you pay.

Clearly the time has come to think differently about software pincy, to think about it in terms of merality, not legality. Would you steal a software program out of a retail store? Of course not. You wouldn't even think about it. So what makes k any more right to make an illegal copy? Once you have the facts, there is no way you should ever 'stack' another software program.

Once the world wakes up to the reality of software pizzey, it can adapt itself to it just like it would to any other important issue. In the business world, that means formulating a company-wide software acquisition policy and making sure all employees are aware of it. In the world of private users, it means just doing the right thing.



SOFTWARE PIRACY

IS THE PRINCIPAL TRADE GROUP OF THE PC SOPTWARE INDUSTRY. OUR MORE THAN 500 MEMBERS COUNT ON US TO HELP STOP THE UNAUTHORIZED DUPLICATION OF THEIR PRODUCTS. IL "WE HAVE RECEIVED INFORMATION THAT YOUR ORGANIZATION MAY BE MARKING AND USING UNAUTHORIZED

COPIES OF OUR MEMBERS SOFTWARE IN VIOLA-TION OF FEDERAL COPYRIGHT LAW. FROM THE INFORMATION WE HAVE OBTAINED, THE SOFT-WARE INVOLVED IS PUBLISHED BY AUTODESK, INC., FIFTH GENERATION SYSTEMS, INC., LOTUS DEVELOPMENT CORP., MICROSOPT CORP., SYMAN-TEC CORP., AND WORDPERFECT CORP. II THE CFO read the rest of the letter. It sugs ed that the company submit to a voluntary audit of its personal computers under the supervision of an SPA representative; that the printouts of the PC directories be compared with purchase records; that any unauthorized software be destroyed and replaced with authorized software; and that the company pay the SPA Copy-right Protection Fund an amount equal to ne retail price of any unauthorized software found. Thereafter, the SPA would release the company from liability from

the infringement discovered. Enclosed with the letter were several articles about the SPA. From these, the CFO learned that the SPA was serious out fighting piracy. She also learne that those organizations that chose not to comply with the SPA were likely to be sued by them. Statutory damages could be as high as \$100,000 per copyright.

"Do we have a written company soft ware policy?" she asked the president. "No," he replied

"Have employees ever been told not "I don't know, I've never thought

He never thought about it. Now, his

company will not only think about establishing a written software policy, but it will pay a penalty for past software copyright infrings:

Scenarios like the one described have been repeated with increasing free over the past few years. Many industries suffer from theft, whether from co feiring, shoplifting, or default on receiv ables. However, the software indu more vulnerable than most because of one key distinction. It's the only industry that empowers its customers to become a cturing subsidiary of its products The nature of software is that every end user with a PC on his desirop has all the equipment necessary to make an exact replica of a software program. And the irony is that the easier it becomes to use

MAINTAINING YOUR SOFTWARE AS A CORPORATE ASSET ere is an inherent difficulty in m ging software as a corporate asset

Copying software is easy to do and so difficult to control. Often piracy is unin-tentional and can be attributed to igno-rance on the part of end-users. Because

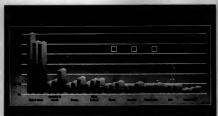
copying software is so easy and beca license agreements can be confusing, many people don't realize that they are ing the law.

However, the copyright law itself is not confusing. The law, which governs the use of commercial software, is very straightforward. It is illegal to make a copy of a piece of software for any rea-son other than as a back-up without the permission of the copyright holder. Com-panies and individuals who break this law can be liable for as much as \$100,000 for every instance of software copyright

LOSSES IN THE BILLIONS

In 1990, the software industry, with anual U.S. revenues of \$4 billion, lost PCs and software, the easier it is to pirate \$2.4 billion in the U.S. from piracy. Worldwide loss estimates are between \$10 and \$12 billion. Piracy not only hurts the software industry, but the U.S. econo-my as well. During the past 10 years, the U.S. software industry has become an important national resource. Approximately 80% of the software used in the world today is developed in the United States.

By depriving the software indulions of dollars in revenue, softw



rates scopardize U.S. leadership in an important high-tech market by slowing down the development of new products. At a time when many claim the U.S. is losing its competitive edge in technology, it is critical to recognize the role the software industry plays in maintaining the U.S. position in the global marketplace.

The corporate workplace is unquestionably the most prevalent software theft environment. As a result, the SPA, a trade group composed of software publishers, lass made is a top priority to work with corporate America to, stop the spread of software princy. The SPA is well known for at two-

pronged approach to piracy.

One approach is an active litigation program against companies and individuals who are engaged in software piracy. In the last three years, the group has filed over 100 lawsuits against dealers, cosporations, hard disk louders and bulk board operators. Many of these have

lawasia againet dealers, corpositions, hard disk louders and balletin board operators. Many of these have resulted in significant settlements, some over \$50,000. The \$780 a striket have that software pirscy is not a cornel told made businesses across America aware that software pirscy is not a cornel told of public suscesses. Through educational materials and speeches, the \$9A strives to or public suscesses. Through educational materials and speeches, the \$9A strives to educate compacter users about the copyright law and how to effectively manage their software resources.

GETTING LEGAL

It's clear that pincy lawsuits and under ser causing companies to get monestrous thought to the software practices of their employees. The only way for a company to avoid the risk of expensive and embarrassing finguistion is by educating employees about the copyright law, and embarrassing genifying programs, approuder factoring anti-pincy programs, approud practices and programs and programs of the programs of

DON'T COPY THAT FLOPPY Many businesses don't think software

piracy is a serious problem. The management of Davy McKee Corporation, a construction engineering firm beadquartered in Pintsburgh, learned the hard way, Just before Thanksgiving 1990, Davy McKee's Chicago office received a surprise visit from representatives of the SPA accompanied by U.S. marshals.

After meeting with the first executive meeting with the first executive meeting the meeting of t

Managers at Davy McKee, like many others, didn't think about the fact that software piacey is against the faw, not did they consider the exposure of their company with every unauthorized copy of software. But the software industry is fighting back, and corporate America is learning to take the software convicial.

res at each location

laws as seriously as the myriad of others for which non-compliance can put their organiza-

plance can put their organizations at serious financial risk.

The fact remains, however, that every computer user has all the outpinnent necessary to make a perfect copy of a software product. The software industry's challenge is to convince users that the case of duplication does not justify the

when of the product.

Many employees are often confused about what is expected of them when it comes to expected of them when it comes to expected on the confused of the confusing the confused of the confusing the confusion to the confusion to the confusion that the con

gal to make unauthorized copies of software except for archival or back-up puppose. Companies and individuals who break this law can be liable for as much as \$100,000 for every instance of software copyright violation.

THE SCENE OF THE CRIME

More than half of the revenues loss from piezo per a result of "onlither;" a cine often committed by otherwise lists being employees who make copies of software to use in the effice or to take home. It is inside that people who would never think about steeling a canchy har form a drug stone seem to have no qualino about copying a \$500 software package. The scene of the crime is not only corporations, but subside possible packages and the complex of the committee of the crime is not only corporations, but subside possible packages and committee of the committee

organization, government agencies a versus law enforcement agencies. Arguabby, an entire computer plasform has been lost to software piacey. In 1985, the Tant ST became so identified as a pinate's machine that software developers refused to write programs for it, and it has all but disappeared from the market. And the consumer lost a low-priced com-

puting option.

Often overlooked in assessment of piracy is the cost to the user himself.

When users copy software, they finis no coon married for valuable benefit of oneon married for the software. These include a variety of user manusla and interdisk, outtomer telephone support and nooffscation of, and information about, upgander. Services like these are crucial to the value of the software product. They also increase the piece of the product for all legitimate partitions.

HOW THE SPA TAKES

Over the past three years, the SPA has collected more than 5x million in penal-ties from software pictues and generate de substantial amount of new sales fine the software industry as a whole. Recoveries from settlements are used to fund future litigation as well as anti-piracy educational efforts.

The 59A targets piezes based on topreceived force a strayed o'scorce, pinmarly in satisfuscy bodiese (600 586-7503), approximately 50 calls as dynamic strayed orgonic of 19703, approximately 50 calls as dynamic miscoloring piezed copies of their disputcied employees. Interestingly, the 59As feet them each in hiese Yoo CO, on three separate organizations were based on evidence provided by a single based on evidence provided by a single

While the SPA has filled lawuits pagainst more than 100 companies, it reagainst more than 100 companies, it receives many more reports that do not n
lead to legal action. Many of these are resolved with a cease-and-desist letter. Adofferead to the president of the company,
the cease-and-desist letter identifier the insoftware the company is suspected of pitrating and warns the company to case
and desist ideal software case
and desist ideal software taspe.

To more actions offeration, by 50% reports at anoth, which is another alternative to litigation and, herefore, a strategy perfected by anny compassion. During more actions to the production of the production of

In cases the SPA believes are appropriate for litigation, it will often obtain a search and seizure order from the court.

This order empowers representatives of wethe SPA, accompanied by U.S. manhals, ea to enter the permises of an organization
use—and conduct a susprise audit of the comincompany's FCA. Based on the evidence gathorder evidence for the second of the second of the second
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CONTROL PROTECTION AIRO
The 33th has been leafing the flight
against pincy in North America Since
1988. The 34th and paringst activities are
coordinated through its Copyright Protection Fund. Current puritiques in the
furnis include Acidne's Systems, Aldas,
5 offware, Clart, Phili Generation Systems, Fink Seftware, IRM, Lonn, Microguild, Microsoft, Novell, The Siana Claus
Coperation, Software Publishing Cospontons, Symaner, World Feel Series
Line State Control

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to serve as a plaineff as well.

The Copyright Procession Fund fights software princy on behalf of the entire Rostfware industry, not simply the 19 members of the Fund. Therefore, Fund participanes take action against businesses and individuals who printe not only business applications but consumer and educational software is found to be plained, those publishes insisted to join as additional plaintiffs in the nat.

found to be pirated, those publishers are invited to join as additional plaintiffs in the nat. are consequently as a possible of the configuration of the configuration of the configuration of leading software companies we instanted their own anti-plany programs. Novell, which employs four fall attempts, repeating the configuration of the confi

islegal sandra Boulton, director of copyright that is protection programs at Autodesk, deperate enhances her program: "While we like to recover money from persons who violate approaches to propright, the overdiding objective of our programs to sell legisimate copies of out."

THE S.P.A. WANTS YOU TO PAY FOR YOUR NETWORK SOFTWARE. ONE WAY OR THE OTHER.



's your company at risk ?

SiteLock meters all of

The Software

the softwere usage on your

voult always be legal. And able to prove it.

If all the software on you could be committing a

only on the number of simultaneous users

ential problems out of your It controls which softprograms and versions run on the Novell network.

It even detects virus infected or altered software

800-552-9876



program to effectively manage a compa-

records, and supervision of compliance

The importance of assigning a specifi

Employees have access to one per

son to this task must be emphasized

to is knowledgeable about all aspects

ion, assigning a person to this role fur

to software license compliance

SOFTWARE PIRACY: ANALYSIS OF THE LOSS

SPA research results confirm empirical and anecdotal evidence that businesses use significantly more software then they buy And loss estin

conservative because each unit of software sold is compared to a PC purchased in the same year. Users of older PCs also buy software. Assum ing that some of the current year software is sold for use on old machines, the ratio re ally reflects a much larger estied loss to piracy. In addition, these estimates do not include illegal duplication of operating systems, educational ware or entertainment software prod-

ny's software inventory. ucts, which also represent a significant e loss to the industry SPA believes U.S. and Western Europoint a Software Manager This person is responsible for im pean loss estimates are conservative benting all aspects of the software policause they represent the revenue loss to software publishers but ignore channel cy, maintenance of the various deta market markup. Therefore, the loss to the

entire industry is not reflected. THE PUBLIC AWARENESS CAMPAIGN

of the company's software policy. In ad-The SPA long ago recognized that litiion should not be the primary vehicle for broadcasting the anti-piracy message ther proclaims the company's con ing in 1988, the SPA began an active public awareness campaign to educate ers about the lawful use of software Through placement of print ads, public articles, news relea video news releases, the SPA has been actively working to raise awareness and prevent the spread of software piracy.

Interviews with major business and trade press, as well as with various radio and television programs, have also helped spread the message. In addition, the SPA staff and members of the Copyright Protection Fund are making speaking appearances on the topic of software piracy. Presentations are given to a variety of target audiences in cities across

IDELINES FOR IMPLEMENTING BOFTWARE MANAGEMENT IOGRAM

he SPA recommends the following

log detailed below. Purchasing ation, including pur chase orders and management or supervisor signoffs, is inte-grated with the software log. Software purchasing re-quirements are handled like

any other company investment. The organization defines its software requirements and supervisors approve such reirements by evaluating various packages such . as rating systems, database management, spreadsheets,

assessment process is as prompt and effi-cient as possible. Extended lead time is avoided because this puts pressure on oloyees to make unauthorized copies of software as well as hardy

Software purchases are bud along with hardware purchases. To proonly for purchases of computer hardware encourages illegal software copying. Software purchases can equal 50% or more of the hardware cost of the computer. Because it is a significant ex-pense and commitment by the company and yet also enhances employee produc-tivity, it is planned and budgeted along with other aspects of your information processing. The key to developing a realplement a Software Code of Ethica d License Compliance Program Develop a Software Code of Ethics istic budget is to plan and evaluate the

and a software license comp gram for all employees (See sample on next page).

ulate Software isition Policies All purchases of software proceed through the organization's normal purchasing channels, which require a pu chase order and supervisor or man ment approval. Even though varie software packages may be inexpens software is not to be purchased throu employee expense reports, travel repo ing documentation, including purchase orders and management or supervisor signoffs, are integrated with the software

word processing, desktop publishing, graphics, accounting nications, utilities and programming languages. It ay be advantageous to develop a company standard for a mber of these applications. The needs-

software as well as hardware.

oftware manager delivers the uals of the new software to indial users. The manager leads the software on the hard disk where it resides as a back-up copy. Original diskettes are kept in a separate and safe storage area. By ring secure storage of original ensuring secure storage of original diskettes when not in use, the risk of software theft and unauthorized duplica-tion of software programs is minimized. Software is stored so that original system disks are not subject to unauthorized dudication or damage by environ tors such as heat, fire, water, etc.

COPY SOFTWARE ILLEGALLY AND YOU COULD GET THIS HARDWARE ABSOLUTELY FREE.



Don't Copy That Floppy

process is supervised by the person responsible for software compliance within the department or organization.

Register
The registration cards that are included in all software packages are promptly com-pleted and mailed to the pub-lisher. This enables users to receive technical support and stification of upgrades. Also, if users lose the receipt, the isher has a record of the numbase

on't Forget

Manuals, tutorials and other user-oriented documen tation reside with the user of the software. This again encourages individuals to purchase legitimate software so that they can have a complete set of manuals and other docents from the publisher. Network environments may not choose to have a manu for each user. However, the my has a resource person available to respond to

Keep a Software Log Maintain a software log of all software purchased by the company. The software log

notes the location of each software package and the CPU on which the software is installed. The software manager main tains copies of the original license agree ment and any other documents showing nate acquisition of software. This is ed with the purchasing documentation entioned above. The log contains the following:

. Date and source of software acquir tion, including details of the site license. volume discount or network version terms, and software serial number . Name of the authorized user

· Existence, location and number of any back-up copies Copies of the registration card.

Many software purchases fall below company guidelines for capitalization as a d asset. Because they are not tracked

as part of a fixed asset system, they are often lost or invisible to company records. The investment in software as well as compliance issues makes the soft ware log an essential management tool in the battle against piracy.

The audit function allows you to de-

termine compliance with the various aspects of your company's policy on soft-ware. It includes, but is not limited to such things as a review of the company's education program regarding software, a review of the software log and license agreements, a review of the company's software budget and a review of actual software purchases. There are several steps to consider when undertaking an audit staffing, planning, field work pro-

res, report and follow-up. Audits are normally conacted by personnel who are independent of the departments that are being tested. The audit staff maintains objectivity and is free of conflicts of interest when performing the audit tests. In some com panies it is difficult to assign independent employees to such an audit function, therefore training and information shout the need for objectivity and independence are impor-A clear and well-defined set

of objectives is established for each organization. All person-nel involved in the audit are well versed in the objectives These objectives may be dis cussed with the various company departments and users of software. An internal control aire is used to identify internal control strengths and weaknesses. The questionnaire is designed to analyze the crimpany's internal controls, but the auditor must consider the appropriateness of the controls given the company's operating environment.

After determination of the

internal control issues, the audit program is written, re riewed and edited so that the

Field work is then scheduled. Each de rtment knows when audit personi will be testing their systems and has all required materials and information gath-ered in advance. All findings are well documented and corroborating evidence is placed on file. All work is reviewed in detail to ensure that appropriate conclu-sions are made given the nature of the findings and evidence on file. If neces-

findings and evidence on file. If neces-sary the audit program is revised. Once the field work is completed and reviewed the audit findings are summa-rized. The results are tabulated in a con-cise report and the appropriate conclu-sions presented to the company's

Software and data backups are an esntial part of managing your computer



Best of all, Applicator gives you the flexibility



back up all data files separately

processing Backups however, offer an

Set a Policy for Home Usage of company software at home and software from home on company computers is another area of risk Under no circumstances does an empleate brong software from home and kud it on company computers. An organization's computers are community assets. To ensure that all software used in an organization is both

legal and virus-free, software is pany's established software acquisition - Frequently, publishers specify in their ents that company owned software cannot be taken home and load-

opportunity for illegal copying of softresides in the company's computer. If an ware. The company's software backup employee is to use software at home the policy considers this. One approach is to company purchases a separate puckage and records it as a company asset in the

The only way for companies to

deal with this pressing issue is by educating employees about the copyright law, conducting audits and en-

forcing anti-piracy programs." purchased and installed through the com

software log. However, some software companies provide in their license agree-ments that home use is permitted under certain circumstances. Be sure to check your software license agreements to see if

this applies to you.

ed on an employee's computer if it also There is no excuse for software piracy And it will no longer be excused. Lost revenues of \$2.4 hillion in the U.S., and over \$10 billion globally, on an annualized hases, cannot be ignored. Nor can

the damage to the U.S. economy. Rigorous law enforcement is bucoming a reality for software pirates. The SPA and private soft ware companies alike are striking back at offenders in the form of search and seizure orders, audits and lawsum. This trend will only

The only way for compar deal with this pressing issue is by educating employees about the copyright law, conducting audits and enforcing anti-piracy programs. These efforts must come from top manment, as employees are confused

about the issue.

SPA Executive Director Ken Wasch on Software Piracv

As founder and executive director of the Software Publishers Association, Ken Wasch is in the soft-ware piracy trenches every day. Although be sees plenty of problems, be is also optimistic about the propress that has been made. In the following interview, be examines the critical issues surrounding software piracy and the development of corporate software management policies.

How do otherwise respectable people justify software Respectable people justify piracy on several grounds. First, they don't feel they need to buy a copy of software they don't use every day. They feet that because they are only going to use the application infrequently, they shouldn't have to pay for it. That's the most frequently heard argument for pirating system or application utilities. But when this software is used, its value is frequently immeasurable. Another reason is that software prices are too high. But when you nces productivity think of software as an office tool that enhances productly the cost of software relative to the value it creases throu ctivity gains is really very low. Remember, without so

ware, a computer is no more valuable than a doorstop

Do violations doubt that SPA or some other apprieved party will actually take them to court?

Those that doubt our determination to take violations to court do so at their own peril. They could be in for quite a supplie. I think that at this post, we have muck it peril of the p

never believed they would be cause

Software has been around for a long time. Why is the issue of software piracy getting so much attention new? It's getting a lot of attention now because companies have only recently proliferated to the point where they are on most white collar workers' desix, in 1981 when the IBM FC was introduced, there were one million companies in the entire world. Tooks, there are 90 million FCs in use in the United States alone. So it's not surprising that these millions of new computer users needed to be educated.

net should someone do if they know their company is gaging in software piracy? The first thing they should do is notify the most senior of-

ficial they can, to get his or her support in correcting the problem. The next thing to do is volunteer to help the company develop software management procedures that will cor-rect existing problems and ensure that future copyright in-

to only poorly managed companies have a soft nanagement problem? No. Every company has a potential software management roblem. We can't be sanctimonious about the fight over software piracy because every organization struggles to es-tablish a policy and ensure that it is enforced. Successful companies have given a high piority to implementation of software management procedures.

save all kinds of axes to grind. We receive 10 to 30 calls on our piracy hottine per day, and we engage in a very vigorous analysis of the allegations that are presented to us. In over 150 lawsuits that have been filed, we have made only one

ell us more about the software piracy while ow York City.

New York City. This vocams worked for a temp agency and used Multi-mate for word processing, in three consecutive companies where she worked, he sat down at a keyboard with a pho-tocopied template, and it made her suspicious. With further investigation, the figured out that each one of those compa-nies was using pirated software. We subsequently took ac-tion against these companies.

e problem of software piracy getting worse or bet-We think it's getting better. We get very few repo we time 30 companies. The larger the company, the more eith it is they have established software management proce-ries. We're finding that most of our cases today involve mpanies that have between 50 and 500 PCs, but we've acbrought lawsuits against con

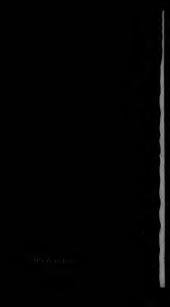
at materials are available to help companies get and

What meiericals are available to help companies get and stry ingel?

The SFA has probled three took to belp commissing and and any begit. The line is SFAsick and SFAsick for the Medi-and any begit. The line is SFAsick and SFAsick for the Medi-ned and the structure of the SFAsick for the Medi-ical and the structure of the SFAsick for the Medi-dal doub to conduct an investory of notivare applications. The second tool in the video, "Thy solar to Worth the Bick." We have distributed 25,000 copies of this video. The third, and possibly more shallowed tool, is one was Software Medi-agenesis Goode, which we've just published, it contains a comprehensive as of procedure for managing software are

we can the cools of implementing it domina-unt program be ministrated?

You can see money by placing someone within the con-mary in charge of establishing a software management pro-mum. There is an up-front cost of coloring the employees of conducting the first audit, but after that intill audit has ene completed, the cost of ministrating an existing software energy of the cost of ministrating an existing software energy to the cost of ministrating an existing software reaches in a consulty very low.





Meet The Finalists

See Their Applications

Come meet some Windows¹⁰ pioneers and learn how they used Windows technology to build customized mission-critical applications for their organizations.

Finalists from the WINDOWS WORLD Open, Computerworld's Custom Application contest will be running their applications live on the WINDOWS WORLD show floor, at the WINDOWS WORLD Open Booth, April 6-9. Learn from your colleagues how they put Windows to work in their organizations. The 21 finalists include:

- Blue Cross Blue Shield of Michigan
- The Prudential
 Connecticut Mutual Life
- Insurance Company

 Naval Electronic Systems
- Naval Electronic Systems Engineering Activity
- Edmonton Public Schools
 Claremont Graduate School
- Claremont Graduate Sch
 NCR Organization
- Sun Hydrolics Corporation— Sun Optech Group
 Otis Elevator
- Orlando Health Care Group
 Loral Aerospace
- Full Circle Computing
- PHH Fantus
 Ansett Airlines
 General Electric/
 Proper Generation
- Con Edison
 OTC
- Chevron Information Technology Company
- Revco D.S. Incorporated
- Brightridge Solutions
 University of Connecticut
- Health Center/University Physicians

Join us in saluting the winners in a special ceremony on April 7, at 3:30 p.m. in the McMahon Room (McCormick Place).

Bill Gates, CEO of Microsoft, will announce the winners and highlight their applications.



The WINDOWS WORLD Open, cosponsored by Computerworld, Microsoft, WINDOWS WORLD and Windows Watcher Newsletter is the first annual contest to recognize outstanding custom application development for Windows.

In Macintouls-to-IBM mainframe connectivity, there's only one company that leads the field. Avazar. Following our recent merger with Tri-Data Systems, we now offer the broadest range of Mac-to-mainframe connectivity solutions in the industry. From our cost effective MacMainFrame board-level workstation and gateway solutions, to RISC-based Netway gateway products, we have an answer for every price and performance configuration. All made to the most exacting standards—easy



to install and Available easy to use. Just

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ENTERPRISE NETWORKING

INTERNETWORKING . SERVICES . NET MANAGEMENT

APPN awaits industrywide approval

BY ELISABETH HORWITT

Third-party partners form s key component of IBM's strategy to push Advanced Poer-to-Peer Networking (APPN) as the pri-

Three LAN management paths open BY ELISABETH HORWITT

lett-Packard Co., Cabletr

Firm discards public frame-relay network

BY JOANIE M. WEXLER

PORTLAND, Ore. — A compa-ny that has tested public frame-relay service from WiTel for two months has decided instead



his WilTel network access from 256K to 1,024K bit/s he could burst traffic at the

Give and take

LAN management paths

CONTINUED PROM PAGE 67

etwork to collect the data, the firm

ded. HP also announced OpenView Re-mrce Manager for its OpenView Inter-ment Manager for DOS platform. The plication allows the user to click on a ricular bridge or hub segment, then all a graphic depicting the top talkers at -minute intervals. RP and. The pair-will be available in June for 42,000.

All is the feasily. The question is whether HP will make EASE available to the rest of the industry to re keep the technology anchored to own network measurement and bub pincipal manylest or ensurement, and just principal manylest or research firm Dataquest, Inc. in San Jone. Call Regist root, EASE works only with HP holos and rooters and the manual part of the principal manual part of the part of the principal manual part of the part of the principal manual part of the p

or EASE, which would do away with any competitive advantage the technology times its own platform.

HP plans to extend EASE beyond its HAP plans to extend EASE beyond its HAP plans to extend EASE beyond its motivation of the plans to extend the routers and emote bridges, according to company policeman David Harris, HP hopes by ext fall to announce if and how it will sake EASE available to other hab and utter devices, he added.

One nouselibity is for HP to rouse and

mater Licks, available to other has set One possibility in 6 HP to come up with m add on that would implement LCKS sampling complishing on other variety LCKS sampling complishing on the nite plan is to move LCKS management policitation to the like version of Opera-View. Notime frame was given, management years based on Sampling LCKS and the Complishing team (CLCS) Version 1.0 will allow users to team (CLCS) Version 1.0 will allow users to device concerning with other SAMP.

ces concurrently with other networks concurrently with other SNM id systems on Sun'a platform, Chispones and Bill Fulchino said.

In addition, Chipcom plans later this year to introduce OnDemand NCS appli

Frame relay CONTINUED FROM PAGE 67

s to maximize use based on the bility that some customers will not

show up.
However, the Willel service, based on
the StrateCom, for, IPX PastPacker TI
writte, gives the user no information
about when other customers are using
handwidth, Richarterian said.
Conversely, he said, industrial hondwidth, Richarterian said.
TI network "allows you to monitor and
essential the said of the sa

acket."
He said the drawback to adding the
6,995 Newbridge frame-relay card to
is T1 multiplexers is that "you're back
paying for dedicated bandwidth."
WiTel said Richardson's application is

WiTel said Richardson's application is probably not an ideal candidate for today's public frame-relay services. Heckart add-ed that big advantage of frame relay is that it is an enabling technology that lets tomers achieve greater

cations that can automatically react to re-ported error conditions by moving traffic onto a backup port or line, balance loads or shut down ports, Fulchino said. Users can also program the software to change the configurations of Chipcom hubs to

ARTS AND LETTERS

ISLAND, WRITE, DRAW & PAINT Island Graphics Grap.

exchange Con Data Corp. as its Chi







and 16-bit XT/AT

CA-20/20





VideoTelecom offers stock shares





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ng to most UNIX users. ccord Just this once, we'd like to Let's begin with Lotus 1-2-3" dozens more on the way.

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your expectations, prepare to raise them again. Because you can actually be more productive on a SPARCstation than on any

PC. Even using the same software SPARCstations are designed for multitasking; so you can prepare

a set of overheads while your

COMPUTERWORLD

APPN awaits industrywide approval

Inc., Novell, Inc. and 3Com Corp. unced at last month's APPN briefing they intend to support the APPN net-node. IBM announced an APPN deers kit that the above vendors will and that will become generally avail-

SAVE MONEY

RECRUITING

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dBASE IV









You'll also be working on a larger more about SPARCstation busi-

computer is recalculating spreadsheets and searching databases in the background. Our built-in networking makes it easier to collaborate with others - even if they're working on DOS or Macintosh* computers. Our OPEN LOOK* graphical interface brings a welcome level of consistency to software from dozens of vendors.

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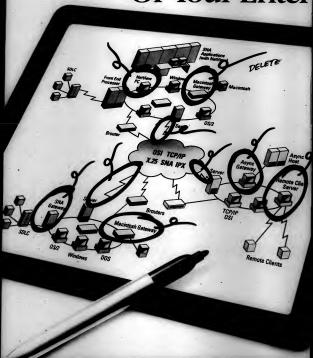
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ONE is the first totally open networking architecture from a major computer vendor. It's designed to give you transparent, enferprise-wide access across multiple networks, machines, and software, no matter what proprietary or transitional environment you may currently be using.

Find out how to get more out of your enterprise network, phone 1-800-CALL NCR for a free brochure. We're putting together the future of networking.



Open, Cooperative Computing. The Strategy For Managing Change.

NEWPRODUCTS

AMT International Industries, Inc. has announced the AMT STAR 96421 inter-nal full-duplex modern. The product offers V.42 error corre-tion and data compression at rates up to 4:1 for an effective throughput of up to

4:1 for an executive to a surface.

It includes features to ensure accurate communication in unattended mode over poor quality, dial-up connections, the

other quanty company said. It is priced at \$499. AMT International Indust 16571 Gemini Lane Huntington Beach, Calif. (714) 375-0306

Telebit Corp. has introduced the Moden

The modem-sharing software product runs on personal computers and operates as a nondedicated communications server for Novell, inc. Net Ware and NeBIOS lo-cal-area networks. The ModemMizer supports two modems with port speech as high as 38.4 K bit/sec.

igh as 38.4K bit/sec.
It includes network management func-ons such as activity reporting, data trace spablity and remote console capability. handles functions such as electronic sal and file transfer without interrupting se operation of the host PC.
The price is \$349.

1315 Chesapeake Terrac Sunnyvale, Calif. 94089 (408) 734-4333

Visual Technology, Inc. has introduced the TX600C color X Window System display terminal.

The model features a 32-bit, 25-MHz Motorola, Inc. 68030 processor, a graph-ics processor and 6M bytes of memory. It

ers performance of more than 60,000

offers performance of more than 60,000 Xstones, the company reported.

The TX600C costs \$3,495 as a color base only, including programmable republicants to match users' existing monitors. A fully configured system costs \$5,865. Visual Technology 120 Plander Road Westborn, Mass. 01581 (508) 836-4400

AT&T Paradyne has announced softwar for its multiplexers that will provide star dard T1 routing and management features for fractional T1 customers. The Advanced Fractional Networkin The Advanced Fractional Networking Software rans on the company's Accainst multiplexers. It features fractional T1 failure detection and recovery, improved control over applications routing and par-titioning of network bandwidth. Priving for the software upgrade AT&T Parachysis to \$2,00. AT&T Parachysis to \$2,00. AT&T Parachysis (Software Lindburg) BS-45 128th Are. N. Larroe, Fla. 34649

Largo, Fla. 34649 (813) 530-2000

Front ends, multiplexers

Luxcom, Inc. has announced the availabil-ity of the 3270/99 Multiplexer.

The multiplexer works with the com-pany's Series 1000 and 2000 Premises Access Units (PAU). It accepts up to 32

minal access sessions over a single riscal connection with IBM cluster con-llers. As a result, the PAUs integrate tures of an intelligent hub with multi-The unit costs \$995.

3249 Laurelview Court Fremont Calif. 94538 (510) 770-3300

VMX targets voice apps with new software tools

SAN JOSE, Calif. — Voice processing systems maker VMX, Inc. is promising to speed the development of new forms of voice applications by providing software tools that allow callers to access information in various forms: voice, data and im

VMX, based here, introduced three software products last week for its VMXworks family for end users and said ty questions.

ty supplers.

The new products include the Entryworks system software, which was designed to improve access to VMX's Worksolution applications and allows users to attach voice messages to transactions and support local databases within the VMX system.

VMX also introduced Hostworks co tivity software for links to host datab Hostworks reportedly allows applica to emulate either an IBM 3274 cont

environment or a Digital Equipment Corp. VT100 terminal communication

The third new product is Toolworks, a velopment environment for creating d debagging Worksolutions applicamax. Toolworks uses VMX's Call Plonguage, a telephony-specific programng language. Toolworks' on-line deguing tools significantly reduce the
ne programmers spend on tuning or
offsying applications, according to
MX officials.

In conjunction with its bid to dra rd-party developers, VMX introd-issage Deak, a Worksolution app in designed to automatically or inporary mailboxes for external

Entryworks, Notworts and 100-works are available now at prices ranging from \$6,000 for Entryworks running on VMX's low-end system to \$36,000 for all three products running on VMX's high-end system. Message Deak costs \$3,000. JAMES CONNOLLY

Gateways, bridges, routers

Com Corp. has begun shipping its NET-uilder source-routing transparent Builder source-routing transpared bridge for Token Ring networks. The product offers sustained through put of more than 3,600 packet/sec, will telefer from the through put of more than 3,600 packet/sec, will telefer from performance. NET Builde supports standards-based network magement including Surple Network Mar agement including Surple Network Mar agement Protocol. It also offers custom

filtering for security purposes and menu-driven configurability.

The local version is priced at \$6,750.

The wide-area version costs \$11,250.

3Com 5400 Bayfront Plaza Santa Clara, Calif. 95052 (408) 764-5000

Radlinx Ltd. has introduced TE-71 and TE-51, products that add asynchronous and X.25 communications support to its Gatelinx 1000 multiprotocol gateway. TE-71 connects asynchronous termials and personal computers directly to be gateway for 3270 and other bost ac-

TE-51 provides similar access for ter-inals and PCs connected to a packet as-mbler/disassembler over an X.25 net

Pricing for the Gatelinx 1000 gates rts at \$16,500, according to the co

151 W. Passaic St. Rochelle Park, N.J. 07662 (201) 587-8822

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New Version 5.1 Also Supports MVS & VM Remote SpoolPrint 3X/400/370 RU To/From S/3X, AS/400, and to S/37

LARGE SYSTEMS

HARDWARE . SOFTWARE . STRATEGIES

U.S. software reuse plan draws criticism

Contractors fear loss of competitive edge, coding and design rights in move to commercial market

BY GARY IL ANTHES

ASHINGTON, D.C. — Soft-are reuse and megaprogram-ing are at the heart of the Penare productivity by the 2000, but U.S. government actors said a

IPL offers three-year warranty on disks

BY SALLY CUSACK

IBM political thing," Strakouch

.G

GARTNER

$E-Mail = Emc^2/TAO LAN$

You've known Emc²/TAO for the mainframe for years — and now it's available for the LAN. Emc²/TAO LAN offers the same features and functions as Eme2/TAO on the mainframe - but with the sizzle of Windows on the Emc²/TAO LAN is very well connected. It's the only LAN E-mail product offering totally seamless integra-

tion with its mainframe counterpart. That means central directory administration, centralized gateways, and scalability. In short — a comprehensive enterprise solution.



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U.S. software reuse plan draws criticism

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n path.

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No other backup media capacity is growing faster. Since 1989, 14-inch Data Cartridge Technology has doubled, redoubled-and is about to quadruple to 10 gigabytes (and can double again with data compression), easily surpassing 4mm and 8mm capacity. And it's growing along a planned, compatible migration path.

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Innovation working for your

Bursting bubbles.

The computer that mad

The bubble in the middle doesn't really exist. It's just an image made from reflections of the sky, of the ground, of the other bubbles.

Only they don't exist either. The whole picture is a mathematical fantasy, and the giant computers that put men on the moon would have struggled to create it.

But an IBM RISC System/6000°, which can sit on your desk, did it easily using RISC technology which was invented by John Cocke, a research scientist at IBM. The RISC System/6000 isn't the only RISC computer, but it is the most advanced thanks to another idea (also Dr. Cocke's) called superscalar technology.



e this picture is also making history.

In an historic test at a national research lab, a RISC System/6000 was pitted against a Cray® supercomputer for selected applications, and it won. But even more startling, the same lab has since replaced one of its Crays with a network of our smaller machines. We point this out, not to brag (well, maybe a

little), but because the RISC System/6000 is fruit of IBM's huge investment in research, and it shows

how our process is changing.

We spend over \$6 billion a year on R&D, and we probably do more pure research than anyone. But lately, our top scientists work more closely with real products, and it helps. For the RISC System/6000,

the man who pioneered its basic technology also led it to market. And the original lab team not only stayed with it, half of them moved from New York to Texas to join the development team.

As a result, our customers (often researchers themselves) can have massive computing power at affordable prices, to help them improve their own products. But what hasn't changed about IBM research is

the value of a person like John Cocke, who is one of 58 IBM Fellows. It's a title he earned by having great ideas, and it gives him the one thing he treasures most. Complete freedom to have more of them.

NEW PRODUCTS

Applications packages

Sirius Software, Inc. has announced the Sirius Time Billing addition to its business accounting software package. Time Billing can interface with the Sir-ius Job Cost module, or it can be used to create customized invoices. Billing types include fixed contract, percent complete,

clude insed constract, percent compace, st plus and retail pricing.

Labor, material and four other cost percent can be included as subtotals on a sme Billing invoice, and automatic calcu-tion of retainer, sales tax and discounts

al history invoice file is avail-

able that allows past invoices to be re-

Pricing runs from \$300 to \$1,000. de-

ding on platform. Arrius Business Accounting software is lable on DOS, Unix, IBM AIX and oth-

345 W. Second St. Dayton, Ohio 45402 (513) 228-4849

Xpoint Corp. has announced Version 3.1 of Formsxpress form and label generation The software runs on IBM Application

System/400s. The new version adds sup-port for IBM Advanced Function Printing and Personal Printer Data Stream print-

It also offers improved font s and increased performance when merg-ing and printing forms with application

Pricing ranges from approximately \$5,000 to \$12,500. Xpoint

3100 Medlock Bridge Road Norcross, Ga. 30071 (404) 446-2764

Caelus, Inc. has ported its Caelus Man-agement System (CMS) to the Unix oper-

d enterprise management so stem. Its features include di ystem. Its features include dynamic racking of inventory levels, production fanning, unlimited bill and route versions er part, interactive Sales Order Entry and Bill of Materials modules, integrated thop floor data collection and third- and ourth-generation language report writ-

The CMS package comprises 16 core idules and is intended to expand beyond e normal capabilities of standard manung resource planning software, the

company said.

Pricing for the full system ranges from 60,000 to \$170,000, depending on num

ber of users.

Initially the product is offered on Digi-tal Equipment Corp. Ultrix systems, with other Unix versions to follow.

Caelum

Turnkey systems



UDS LanFast™ network modem puts your node on the road

> Access to local area networks now extends well beyond the office walls, thanks to the new LanFast DM 20 from UDS. The LanFast DM 20 is a LAN-

resident dial-in/dial-out device, with a built-in V.32 bis/V.42 bis modern and Ethernet LAN adapter card. Its presence on a Novell LAN enables your "road warriors" to access the network, using a standard modern from any place that offers a stand telephone jack.

The unit supports thick, thin or IOBaseT Ethernet, giving remote users and local nodes the same access to E-mail, shared databases and other network resources. Three levels of security deny access to unauthorized users, and a second high-speed serial port extends network reach by acco modating an external modem or high-speed digital device.

LanFast DM 20 is shipped with all necessary hardware and software. For remote access, it supports standard modems at speeds to 57.6 kbps and popular communications programs such as Procomm Plus Network and sstalk Mk. IV. If your people on the move need

everyday access to their home-base LANs, let them take a node on the road. For full details, contact UDS at:

800/451-2369.



NCR Corp. has announced the NCR 7780 document processing systems. The NCR 7780 processes checks, remittances and other documents at rates made to the processes of the processes of the processes. The system can plottographically capture as image, store it, interpret the printing on the document, excode an out the document. Excode and sort the document of the printing on the printing of the printi ter amount recognition technich lets the system read and reco Pricing starts at \$75,000.

NCR 1334 S. Patterson Blvd. Dayton, Ohio 45479 (513) 445-4851

Utilities

Kisco Information Systems has an nounced the availability of DSK Manage for the IBM Application System/400 mid

range computer.

The software package comprises a set of disk backup utilities and disk utilization

analysis programs.

It allows users to perform backup operations while the system still supports active users, it also provides incremental backup capabilities.

A simple-machine license for DSK

A single-machine license for DSK Manager is priced at \$600. Additional copies are discounted, and a free 30-day trial is available. copies are discounted, and a re trial is available. Kisco Information Systems Suite 120 120 Beverly St. Mt. Kisco, N.Y. 10549





APPLICATION DEVELOPMENT

CASE + LANGUAGES + TOOLS

Cognos recasts, redesigns its CASE tool

PowerDesigner replaces PowerHouse CASE after tests indicate slow speed, poor integration

BY KIM S. NASH CH STAFF

BURLINGTON, Mass. — Cognos, Inc. recently started shipping a renamed, revamped edition of an application analysis and

anto beta testing more than a year ago.

The company reworked the product, whose name was changed from PowerHouse CASE to PowerDesigner, to boost performance and smooth integration with tools from other

Beta-test site managers f milar with both versions of the computer-aided software enneering (CASE) tool said Power CASE. It also fills a hole in Cognos' application development line, said Jim Moakos, client services manager for the Department of Indian and Northern Affairs in Hull, Quebec.

With the introduction of PowerDesigner, which is svail able immediately, Cognos fills function gain the CASE process, observers said. The \$16,500 IBM OS/S

based product does from ent tasks that PowerHouse 4GL can't. It makes the line more complete for the software life cycle," Moskos said.

Torgeting its audience Cognos will market Power Designer to users of the compacy's fourth-generation language

ouse (4GL) because the two offerings tion development tools at Cocog- are tightly linked, according to nos, based here, ment. Hans Galldin, director of applicament.

Doing CASE with Cognos
Cognos PowerHouse family now addresses all phases

d minness mountain		
Tool	Runs on:	Function:
PowerDesigner	06/2	Analysis and design
7		-
PowerHouse Starbase	DEC VAX, HP 9000, Unix	SQL RDBMS repository
2000	, Joseph and .	Person P.
PowerSouse Architect	HP 3000, 9000; DG Eclipse, Aviion; DEC VMS, Ultric;	Maintenance

: Maintenance

House 4GL, this product won't do anything for you," Galidin said. The firm claims a Power-House 4GL installed base of

House 4GL installed base of 20,000 sites worldwide. However, Cognos is not quite an integrated CASE company, according to Moskos. For in-

an integrated CASE company, according to Moskos. For instance, be noted that the firm lacks a product for the top level of application building — business process analysis.

Galdin acknowledged this shortcoming. He said Cognolong-term strategy is in part to develop offerings on that end, e ther on its own or through part nerships with the traditional in tegrated CASE vendors.

Fower Designer runs on Int Corp. 80386-based machinunder OS/2 Presentation Mn ager. It can be used to develapplications for target platforn that include Unix and propetary systems from Hewlet Packard Co., Digital Equipme Corp., IBM, Data General Corand San Microsystems, Inc.

Red Brick Systems eyes DBMS sector growth

BY JEAN S. BOZMAN

SAN FRANCISCO — Red Brick Systems, a small software house, is trying to be the "mouse that roared" in the database indus-

A small firm based in Los Gatos, Calif., with fewer than 50 employees, Red Brick has been trying for several months to sell its database optimizer to high-profile systems vendors. And at the recent DB Expo '92 here, it succeeded in announcing its first

T'S A BIG jump for them to get into operating system issues."

> TONY PERCY GARTNER GROUP

such relationship with Soquent Computer Systems, Inc. in Beaverton, Ore. Sequent has agreed to pay Red Brick \$30 millior over five years for the right to in corporate Red Brick's query technology into Sequent's deci-

Red Brick President Ralph Kimball said the 5-year-old firm's horizon will grow even broader than that: He continues to seek partnerships with other systems wenders and claims that they have moved on to another plant to act as a decision-support engine for relational database management system servers.

Some skeptical Sequent will work with Re Brick to apply Sequent's Paralle Data Query technology to the process of downloading main frame database records into Scott Winkler, general manage of Sequent's decision-suppos systems group, said Gold Mincan act as "a query repository on Sequent machines. The dat to be analyzed would come from a variety of RDBMSs, includin

on Sequent machines. The data to be analyzed would come from a variety of RDBMSs, including those from Oracle, Sybuse, Informic Software, Inc. and others, running on a Sequent manchine — or on a remote IBM

mainframe or Digital Equipment Corp. minicomputer. Sybase, Inc. licensed its Open

to Red Brick several months ago, said Tony Picardi, director software research at International Data Corp. in Framingham, Mass. That is why Red Brick's Gold Mine optimizer can now link to many back-end database sources.

Intersolv tool hits the streets to good reception

BY JOHANNA AMBROSIO

The first OS/2 version of Interest of Inte

Once a Microsoft Corp. We down version becomes availa in May, Intersolv President I vin Burns said, the existing DX based package will be plan out, although it will continue

out, although it will continue be marketed for a while. Excelerator, with more the 30,000 users, helps analyze a design requirements for so ware development. The OS package, called Excelerator "helps fulfill the promise" mo to users by Excelerator's or, nal developer, Index Technolo, Cop. Sage Software, Inc. a proutory that rum on a local-arenetwork, it operates on IBM*.

LAN Server, Microsoft's LAN Manager, Novell, Inc.\
NetWare, Banyan System Inc.\s Vines and others. The literator repository can operate a stand-alone or connected to host-based systems such a IBM's Repository/MVS, the

Another new feature is the sup port of multiple methodologies including data-driven, process driven and event-driven. This at lows users to choose whateve methodology makes sense for particular application. In con trast, the original Excelerato endy supports data-driven methodologies.

A third addition is an expensive that allows users to cut tomize the graphical objects an rules defined by the LAN repos

Excelerator II runs on IB 386 and 486 personal compute under OS/2 Version 1.3 or 2 and is priced at \$9,500. It is b ing beta-tested at about 13 us sites, Burns said.

Although it is still early goin the package has had a good recption so far. George Ston principal information technolog analyst at Eastman Chemical C in Kingsport, Tenm., has be beta-testing Excelerator II is about five months and is ju

starting to deploy it.

"The performance is accept able at this point, and the functionality has improved with each new release," Stone said. He added that the existing Excelerator version still has more features than does the new pack age, but "there's enough them to do the compension."

Stone also said that of "key importance is the LAN repostory, which will allow multip project teams to work on the same socilization.

"One tool that supports mal tiple methodologies fits in wit the whole tune of openness, and Ed Aciy, director of not wave research at Technology In wave research at Technology In

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Unix CASE firm to resell databases

BY KIM S. NASH

SAN FRANCISCO - Interactive Development Environments was one of several uter-aided software engineering

computer-aided software enganeering (CASE) companies to mike its presence known at DB Expo, held here recently. The Unix CASE company, based here, announced value-aided reseller agree-ments with Informix Corp, and Sybase, Inc. under which Interactive Develop ment will resell those companies' rela tional databases along with its Software through Pictures integrated CASE suite

Previously, Software through Pictures could access only Interactive Develop-ment's repository, which some users said held them back in terms of application

"The old database was user-unfriendly to say the least," said James C. Puckett, manager at the technical division of Dexmanager at the technical division of seek-ter Forston Associates, inc., an electron-ics equipment maker in Hueytown, Ala. Puckett, who has used Software through Pictures for two years and Infor-mix-OnLine for three, said he is looking

forward to integrating the two products. Interactive Development's proprietary repository requires developers to learn a new language, but both Informix and Sy-base are based on the popular SQL. "In the past, when we've wanted to re-

"In the past, when we've wanted to re trieve application data from the reposi tory, we'd get incomplete or incorrect schemas and would have to rewrite the report. Now, hopefully, that won't hap-pen," Puckett explained.

Interactive Development plans to sta shipping versions of Software throug Pictures integrated with either Informat OnLine or Sybase SQL Server by year

IN BRIEF Pilot offers EDA/SQL link

a Pilot Software, Inc. in Bo-ton recently associated plans for a version of its Light/Sisp Lens infor-mation access system with a link to Information Brailders, Inc. 1 a link of the property of the con-paration of the plant of the con-traction of the plant of the con-traction of the plant of the con-traction data through EM/SQL. A Light/Sisp and Light/Sisp Lens puckage starts at 25,900.

u Menio Park, Calif-based Lu-cid, Inc., a maker of Unix-based programming tools, has an-nosanced an agreement with Hall Computer Systems, Inc. to supply Lucid's Scalable Proceloor Architecture (SPINC)-based C language, C++ and Fortran com-piler technology in Hal's own compilers for its SPINC-based

gland-based Scancom Ltd., maker of the PC Auft personal computer inventory software. The product will be integrated with CA's CA-Netman product to allow automat-ed inventory of PCs. Inventory re-ports held in CA-Netman/PC will be able to be updated without user in-tervention through use of the PC Aufit technique.

was Softlah GmbB in going to have its computer-sided software engineering class and set it, too. Almost one year sap, the Manch.
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Pathfinder captures and analyzes symmetria to be pure data to be pure data to be pure a pariety or components. The analysis module automatically captures data from a variety of sources, including IBM's pCL, program load modules and programs nource code.

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ding to the company, Winix of-nt-and-click access to powerful

Software International, Inc. has sed the release of BMSGEN-SQL

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IMSGEN-SQL was designed to runler Novel, Inc.'s NetWare network
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address the forces behind the restructuring movement in educa-tion, with the aim of identifying technology fit," what technology offers education and opportunities this market offers the telecommuni-

Major Addresses At 10C '82 Luncheon On Monday And Banquet On Tuesday

The Awards Lancheon will focuse William I. Weise, Chairman and GED of American. Wees will offer badgin on a received by the artificial and a construction of th

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al Holding Companies, Cincinnati Bell Telephone Co. and Southern New England Telephone Co. ICC '92 fee applies.

SEPERCOMM Program Participation By A Wide Variety Of Organizations

Prom the Association of Data Communications Users to the Pacific Telecommunications Council and the Caribbean Telecommunications Council, leading organizations will conduct SUPERCOMM '92 seminars conduct SUPERCOMM '92 seminary and bring you cutting-edge persentations. From the editors of Communications Week and Communications Week and Communications Week and Evidence, Network World, and Business Communications Review, you'll learn about leading Issues and how they'll affect you.

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SUPERCOMM '92 Conference Program - No Charge to Attend **fonday**

Sons are considered, as well as who should provide the commons.

17:00 an. 12 Pp.m.

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and implementation strategies.

105 A Report Card on Investments in International T ments in the European Community (EC), Eastern

201-319 pm. Politication processor p

2.00 - 400 p.m.

110 Harmanium Hybrids in the 'Mb - Can private and put

strategies that work toward actanding the reach of a

111 The Carthlean - Telecom Growth Market - Teleco
Carthlean, Central and South American accreames. 2.00 - 5.15 p.m.
11.2 MOSL: The Value of COPPER Junt West Up! — A high-speed copper trans-thictor scans: HOSL High-bit-rate Digital Subscriber Line). Providers as desisyment for TI and Fractional TI services. Asymmetric Digital Subscri

Tuesday

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22 - 64 p.m. Seministra - Work at thisks be Seat Comprosed? - Internation access in increasingly indigent to com-profice. Learn shows the developing consensus among regulators and current to increase the node for the 22 What Commerce Presses Engineers. Comprose and evidence Anteriors. Restricted Color, personal com-22 What Commerce Commerce for Comprose Anteriors and Comprose and Comprose Anteriors. Restricted Color Section 2016.

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Thursday Exhibits Open 9 a.m. - 3 p.m.

Tuesday No PERSONAL SQ Exhabits SUPERSONAL SQ Exhabits SUPERSONAL SQ Exhabits SUPERSONAL SQ Exhabits Supersonal Square Squa

200 - 500 p.m.
405 Signalling System New
200 Mobile Notworks

1215-145 p.m. Awards Lunet £00 p.m. Conference Reception and Benquet

400



9 a.m. - 5 p.m.

800 - 9:15 a.m. General Session by SUPERCOMM '92

220 - 10-66 a.m.
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Thursday SUPERCOMM '92 Exhibits Open

9am - 3pm

800 a.m. - 1215 p.m. PERCOMMI '92 Semi

Gigabit Networking Workshop For Private Network Administrators

Sign up today for this two-day workshop dealing with ultra high-speed data and communications applications for large new two control of the c Mednesday, June 16 and 17. Fiber optic networks have opened up the practicality of ultra high-speed transport facilities. Research and development is under way to extend this capability into practical net-works that will operate at speeds of a gigabit (one billion bits) per sec-ond or higher.

The resulting ultra high-speed digital networks will enable many new and exciting applications in medical, education, military, finanincural, cuteators, insural, than-cial, research and development, and other communities. Many chal-lenges, technical and otherwise, face planners in developing practi-cal networks to exploit the potential

business opportunities.

SUPPROMNE oc-oponsors, the
United States Telephone Association
and the Telecommunications Industry Association, are joining with the
prestigious BEE Communications
Society to provide this special workshop, it will focus on enabling applisoop, it was rose on ensouring appar-cations, extending computer room solutions to enterprise networks, architectural implications of appi-cations, and organizational shifts and economics of glapht networks. The event will be structured with

presentations and discussion taking place from 8:30 a.m. to 2:00 p.m. pusce nomes; w.m. to 2200 p.m. Tuesday and Wednesday, including hunch. As part of the registration fee you may attend (free) afternoon exhibits, which will stress ultra high-speed networks and specific applications at the co-located applications at the co-located SIPERCOMM '92, or strend a wide variety of Lecturical sessions offered Monday through Wednesday at ICC '92, 'but may also participate in any of the 43 SIPERCOMM reminars Monday through Thursday, as part of your gleabit workshop registration.

Gigabit Workshop Goals

identify key applications and opportunities offered by ultra high-speed networks.

- discuss the impact and economics of these applications on network and computer architectures, and
- · identify likely directions for architectures and business opportunities

Gigabit Networking: Who Needs It? Applica tions and Bu Impacts

Mini-Thome I – System Applications and Experiences: Views by users, equipment vendors, and service providers reporting on applications based on extensions of today's computer reom solutions. They will discuss enabling applications and technologies that are making paraligm eithig possible in the global enterprise network.

Tuesday 8-30 a.m. - 9-00 a.m. So Who Needs a Gigabit Network Anyway? Theme Speaker - TBA

Tuesday 9:00 a.m. - 10:30 a.m., McMahon Room, McCormick Place East, Upper Level
Extending Computer Room
Solutions to Enterprise Net-

works
The energence of powerful desk-top
workstations, together with distributed computing and multimedia
information, will stimulate the
establishment of enterprise-wide
giablit networks. The speakers will
share their experience and forecast

Organizers Nim Cheung, Executive Director – Transwitching Research, Bellcure: Tom Browne, Executive Director – Corporate Telecommunica-tions, Bellcore

Technical Program

Chairperson: Jonathan Turner, Pro-lessor of Computer Science, Washington University

- Creative Applications of Large Bandwidth in Enter price Networks Martin Nisenholtz, Senior Vice President,
- Decentralising and Re engineering Work Function Dan Schutzer, Vice President -Advanced Technology, Citicorp
- Applications of New Electronic Imaging Tech-nologies in Enterprise Net-works Bob Sanderson, Director of Research, Eastman Kodak

The Role of High Capac-ity Networks in Manufactur-ing - Kevin Conin, Consultant

Panel Discussion on Above

Tuesday 10-30 a.m.

uesday 10:50 a.m. – 12:20 p.m. fcMahon Room, McCormick Plac

East

Paraciligm Shifts - Enabling
Applications
The session focuses on various
applications that are being developed and considered to create existing
and though-providing paradigm
shifts workwise. Covered will be
applications that will benefit from
signific networks, major classes to
business order throughout the
world.

Organize' Tom Appleby, Manager – Network Strategic Planning, Bell-South Telecommunications Chairperson: Sout Esty, Manager – New Market Development, Corning

Network Access to
Education Resources - Warren
Gifford, Executive Director - Broad-band Services Research, Bellcore

Supercomputers - Will Gigabit Networks Allow Use-ful Applications? Speaker - TB4 Strategic Advantage -The Global Enterprise Net-work - Lawrence Vanston, Partner, Technology Patures, Inc.

Panel Discussion on Above

Tuesday 12:30 p.m. - Chicago Room, McCormick Place East, Upper Level

Luncheon Speaker I – 1-30 p.m. Metworking Reeds for Large Private Enterprise Networks Speaker – TBA

Thenday 2-00 p.m. – 5-00 p.m., McCormick Place North and East Exhibite and Seasions View applications from various ven-dors on broadband solutions that are available today or attend related SUP-ERCOMM/ICC '92 sessions.

Hini-Theme II – Economics Senefits and Organizational Impacts

Impacts
Views by users, equipment vendors, and service providers reporting on enabless, organizational shifts, architectural implications, economics and readmap on "How to Get There from Here."

Wednesday 8-30 a.m. – 9-00 a.m.

Can We Get There à la

"ARPA NET"?

Theme Speaker – William Burr,
Engineer, NIST

Nechaesday 9:00 a.m. - 10:30 a.m., McMahon Room, McCormick Place

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he availability of glgabit networks

and their use for high performance

applications will have a number of impacts on the way in which business is conducted, including economic and regulatory. This sension examines the issues and effects of this technology on the organization, society, and user.

Organizer James Sterbenz, Advisory Engineer/Scientist – High Performance Computing and Communications, IBM Challperson Ira Richer, Consulting Engineer, The MITRE Corporation

En Need for a New Software Platform Enabling Multi-media Network Services – David Nagel, Senior Vice President – Technology, Apple Computer Interactive Multimedia Information Delivery — Sanjaya Addanid, Senior Technical Consultant, IBM Research

Impact of Multimedia Applications on Traditional Telecommunication Regula-tion and Tariffs - Su Personick, Assistant Vice President - Informa-tion Networking Research, Belicore

Changes in the Communications Environment - Private Networking and New Services by Carriers - Handy Meies, Rennical Director - Corporate Backbone Networks, DEC

Panel Discussion on Above

Wednesday 10:30 a.m. Westpessing 10:50 a.m. - 12:20 p.m. Westpool Brown, McCormick Place

Architectural implications — *How to Get There from How? This session addresses the implica-tions of ultra-broadhand distributed applications on the major network clements. The speakers will also consider how and when neigration to future gigabit networks will occur

Organizer Ned Parinholt, Executive Staff – Advanced Systems, MCI Chairperson: Ed Jungerman. Chief

Executive Officer, Impulse Telecom munications

Is Access a Problem? -Dan Kelley, Senior Vice President, Hatfield Associates

A Carrier's Perspective Circuits, Cells, and SONET – David McDysan, Executive Stall – Network Systems, MCI

The Workstation Provider's View — Randwidth vs. Processing — Geoffrey Backs, Director for Networking and Data Communications, Sun Microsystems

The User's Viewpoint -Moving Large Files Past -John Sandberg, Director - Network Design, COMDISCO Disaster Recov-ery Service

Panel Discussion on Above

Wednesday 12:30 p.m. - Chicago Room, McCormick Place East Lunch

Laucheon Speaker II – 1:30 p.m.
Government Policyfhedustry
Stimulation
Speaker – Eugene Wong, Associate
Director for Industrial Technology
Office of Science and Technology
Policy, Waite House

Wednesday 2:00 p.m. – 5:00 p.m., McCormick Place North and East Exhibits and Seadons View applications from various ven-dors on broadband solutions that are available today or attend relevant SLPERCOMM/CC '92 cossions.

Registration
The glabit vanishop registration for is \$260 (U.S. hards) or \$305 after May 25. Five logistrate reasons, sitterated areasons, sitterated areasons, sitterated areasons, sitterated to \$50 participation on a first counce, first-served basis, so please act promptly. Pre-register using the form on last page. Late. I, For additional information, call the vortation prefixer/versioners or the pESE Communications Society, Phonoe (212) 705-7050 or Fax (212) 706-7865.

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scheduled through 2000, but here are the next few important dates: May 2-5

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American Airlines is designated as the SUPERCOMM '92 and ICC '92

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SPECIAL REPORT

WINDOWS INNOVATORS

Small tools tackle big jobs

IS managers, take heart! Low-cost Windows development software offers a new weapon against application backlogs

A LOOK INSIDE

SIX FIRMS DETAIL SUCCESSFUL WINDOWS IMPLEMENTATIONS

ton Bonk Windows 3.0 allows a single interface. Ph ireraft A bery of tools brings data to desktops. PAGE 102

A toolbox of choices

of almost one per day, he release of Microsoft Windows 3.0, there than two dozen Win-elopment aids. Today

control highwood, lead of Microsoft Demokracismic Grapes, and of Microsoft Demokracismic Grapes, and the Persona copyrations are understading to many the Control of the Co

Salyt-oute Scripting Integrages, typications generators.
Also available is a wide range of lities, tools and aids. Your choices hade such things as the following: besource builders that expedite the eation of ions, currors, disalge box-menus and other parts of the in-

ontrol-class libraries that pro dular, add-on functions. lient/server tools that speci

er windows, these singuages ofter mu-windows, our and-paste capabilities and t-and-click simplicity. orland International, inc.'s C++ was first Windows-hosted integrated devel-ent environment to free programmers, the Microsoft SDK. Microsoft followed

be built with alternative products, such as Bortand's Turto Pancal. Digitall, Inc.'s Smalltally' or The Whitewater Group, Smalltally' or The Whitewater Group, Smalltally' or The Whitewater Group, Inc. and the sales at that classive good called "reduction scripting languages." Detector and Smalltall Smallt

most data processing in large corporations is done on IBM mainframes, there are lots of Cobol/CICS programmers who take a differ-ent approach from personal computer pro-

"Corporate executives who think their programmers have to learn C language pro-gramming to join Windows are mistaken."

time at taxes to constant and so on.

Resource builders save time with the ir terface. There are tools that can help cut development time with other parts of a Wirdows program. For instance, control-class

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says Christine Comatord, a consultant at Sausalito, Calif.-based Corporate Comput-ing. "There are excellent tools available to halp Cobol programmers make the transition from character-oriented Cobol to GUI pro-

gramming."

ProtoView Development Corp.'s ProtoView is one such package. The development tool started out as a way to bring the structure of CICS programming to Windows. And products such as Mi-cro Focus Cobol/2 insulate program-mers from learning Windows at the

system level.

Those seeking to speed up the process of building a Windows application can turn to a Windows application can turn to a Windows application generator. These typically are point-end-click tools that produce a riskeletous" application. To put some meat on the bones, programmers add functionality with custom, handwritten code.

The graphical user interface (GUI) is one of the keys to Windows' popularity. Naturally, there are dozens of tools that can help

spring, with Microsoft C/C++7.0.
Programmers who arm't interested in C Impragae right wast to consider a Windowscapable Basic. Microsoft is Vasual Basic in the Control of the Vasual Basic is the Control of the Contro

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Fidelity Investments builds EIS to simplify access to financial data

a senior vice president at in Boston, supervised a group responsible for pro-ducing a critical 45-page printed report on the firm's financial health. Every week, at least 10 employees devoted up to several days gathering data, merging spread sheets and relying on "Sneakernet" to pull together the report for the se

Fidelity Investments, Inc.

*Project Create a Windows-based EIS to make critical operational data instantly

• Business Financial services mutual funds manager with \$165 billion in

• Project hood Bill Nicmi, director of distributed systems development

accessible to financial managers

*Tools Used Excel 3.0, PowerBuilder and SQL Server

"Fidelity is broken up into individual business units. In the past, get

ting a picture of Fidelity as a wh required putting together sprea sheets manually from floppies Niemi said. The new system, Finan cial and Management Information System (FAMIS), eliminates the base database running on a Digital Equipment Corp. VAX server that contains only certified data from each

On the client side, Niemi created links to the data using Powersoft Corn.'s PowerBuilder, a development tool

tions using point-and click techniques. Ex-

For end users, the MIS application romises to be strikingly simple. Clicking orings up the ext ed data in an Excel view. The user can then save the informa tion in a variety of formats and manipulate it in the spreads or modeling program of the user's choice. Users and an e the option of

clicking on a second icon, a PowerBuilder Fidelity's Niemi wants to give users flexibility

ws them to enter projections ilder is missing some key features, luding better reporting facilities

lease 2.0 ships in June.

Even though creating the Power-Builder application required only a coaple of developers, a team of 18 was necessary to get the first 100 users up and running. "One of the roughest things we ran into was in stalling the application on PCs of dif

Another problem was that the PCs were configured for many differ-ent needs. "Some people had 3270 cards for talking to maniframen, and others had 5250 cards for talking to



nior financial staff.

nor inancial staff.

Since adopting a Windows-based executive information system (EIS), however, Lange's employees don't have to do all that footwork anymore. Currently on rollout to its first 100 users, the custom-built EIS is chang-ing the way Fidelity's executives acpasting together the report from diers access data on-line via networked

Fidelity has long prided itself on its commitment to investing in tech-nology. The privately held financial services and mutual funds giant, which manages more than \$165 bil-lion in customer accounts, annually ws an estimated \$150 million into the information systems group. Of a total staff of about 8,000, some 850

people work in IS.

As early as 1988, the IS group began developing Microsoft Corp.'s
Windows 2.0 applications to streamline the work of customer service
representatives. The goal was to

representatives. The goal was to turn the PC into an easy-to-use intel-ligent workstation with the ability to manipulate data in different windows. Today, phone representatives are equipped with Windows workstations that allow them to quickly access of-terus databases and systems, includ-ing stock quotes, newspaper stories

Making a bold move With the customer service department computerized under Windows, the company decided to venture one step further. A 12-week efficiency study by Coopers & Lybrand deter-

d that day-to-day operational in That's when Bill Niemi, Fidelity's rector of distributed systems devel-ment, began to build a Windows-

sed EIS. The goal: to bring re

the data and store it on a wide range

 A Sun Microsystems, Inc.-based SPARCserver 470 running Sybase, Inc.'s SQL Server houses the system for tracking phone inquiries.

• An IBM Application System/400 holds much of the general-ledger

• An IBM System/38 ho man resources information.

• A mainframe holds brok

ebolder data

cessible. Niemi set un a senarate Sv-

AS/400s, so putting an applicati down with Windows was difficult All the PCs also had to be network on a Novell, Inc. local-area network. Niemi said if he had to do it again, he would standardize all the PCs first.

would standardize all the PCs first.

The IS group's policy is to try to get each business unit to be the first line of defense. Eventually, the PowerBuilder applications will sit on 350 deaks, mostly those of chief fi-

Niemi said be intends to give er ers more flexibility in the futur users smore florability in the feature. By June, the Si group loops to have and he query capabilities available. For example, the cash flow report might not have information right now sould for the Maggine final, but we'd like to give the financial manager the shifty to extract that data. In the past, it might have taken an 15 despartments a week to produce that in formation, or it might not have been for the financial manager than the same than

For the moment, those PowerBuilder application guaranteed to save time in the I term. According to Niemi, the eq alent of one or two full-time finan analyst positions will no longer

necessary.

Another equally important benefit, but one that's more difficult to quantify, is the advantage of accessing data that is always fresh and relent. Financial managers can m estments and projection ocial services area

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APCURRENIS

What's New from the world

Smart-UPS, Back-UPS get APC's ABSOLUTE Downstream Guarantee

"APCisoncagain offering our customers a real benefit for choosing our products," said David Vieau, yPMarkeringat APC. "All Smart-UPS and Back-UPS manufactured after 1/U/92 will be coveredby APC-XABSOLUTE Downstream Protection 525,000 Guarance." IUS. and Canada only

ABSOLUTE Protect

stream Protection \$2,5000 Galaries are grown agree." (U.S. and Casada only).

The ABSOLUTE Guarantee promises to repair or related any quipment damaged by surges while protected by a properly installed APCUPS. Previously available on APC's SurgeArrest PULS will Tell, the warranty of our units.

UPS families as well.

Dan Shramck, Back-UPS
Product Manager, said "The
ABSOLUTE Guarantee will
give our customers even more
peace of mind."
"The Back-UPS and
Smart-UPS have substantial

Smart-UIS have substantial surge and spike protection built ing in fact, it's better than most surge suppressors on the market. The ABSOLUTE Guarantee demonstrates to our customers the confidence we have in the protection

Smart-UPS Product Manager Dave Johnson agered. With SmartBoost, the line-interactive Smart-UPS already offers the widest range of protection available. The new guarantee now takes the 'specmanship' our of the buying process. Buyers no longer have to take other vendors wordfor'it when it comes to guarge protection. We

simply guarantee R."

"What's most exciting for APC are the new benefits we can offer to LAN workstation and PC users," said Vieau. "They can now get superior surge protection and filtering, battery backup and our ABSOLUTE Guarantee all starting at jous \$139 (U.S. pricing).

APC Preferred 3to-1 by Infoworld,
PCWeek readers

now covers all 110V models in the Back-UPS and Smart-

New studes by PCMeek and Infourrid confirm what their editors have been suying all along APC in the payletering protection for images-critical refluents. In fact, residers preferred APC protection more than 3 to 1 over their things their The studen foreconstrated that a market augment once staked out by more than 20 companies is now demanded by any fact.

Tripp

"People buy what works day in and day out. They buy what does the job for them, and they stop buying what doesn't," said harm Devs, Dir. of Cars. Comm. "These studies show that our summitment to building the most reliable power protection in the world is paying oil."

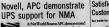
NEW FOR '92 New pricing

means even more value!

Join us on CompuServe!

Gustamers can now get windows access to the best UPS tack support in the besiness was Companiere. Souring Marrin 2, 1992, APS und offer a new forman to allow APC customers and prospects to ank cestions, nonnel technical support, access software patches and learn since about APC. So PC VEN E for the latent in reliable UPS inschnology!

Free T-Shirts to Satisfied Customers!



At NetWorld Boston APC demonstrated NIMA prototype support in Novell's show booth. As the leader in power protection for LANs and WANs, APC has announced its commitment to fully support Novell's new NIMA and NIMS programs.

"Providing timely power quality and power fault data then Novell's new architecture will be an important part of the future of network fault tolerance," said Doug Rademacher, APC's Software Product Manager, "We will do all we can to provide the maximum benefits toour Novelleaustoneer."



Back-UPS Stop Surges While On-lines "Explode"

that much hot air has been blown about the "benefits" of on-line UPS systems in the PC environment. Unbiased sources such as Byte. Computer Reseller News, PCWeek and PC Magazine have concluded that the best type

of UPS for a network is not an on-line at all, but a standby or line-interactive UPS. "I know all about hot air," said Joe Zeigler, President of Arrakis Publishing, who arned first hand how standbys perform



Arrakis Publishing offers software for fire departments as well as OURCKUP (\$129.95), to manage shipping via United Parcel Service. (To learn me call 1-800-327-

"Our lights all burned brighter...flame actually came out of the back of our server..." Joe Zeigler

is as close as you can get to the lightning

APC SATISFIED CUSTOMER

capital of the world. It's a place where ligh ning does indeed strike the same place twice, and this past June, Arrakis got hit. "Our lights all burned hrighter and then flame actually came out of the back of our

Novell file server," said Zeigler. "At the time, we were using Unison units on the server and on a stand-alone PC. We had only two APC units then, and the computer and ph system plugged into them were the only things saved."

Dan Shramek, Back-UPS product m ager, explained. "The Back-UPS are re nowned for their surge suppression, which tops the performance of most surge suppres sors on the market. What's not understood is that most 'on-lines' stop surges the same way standhys do...through the use of filters. This is an excellent example where superior Back-UPS protection meant the difference between

survival and an expensive repair." "What was amazing to us was that the computer plugged into the APC unit was on the same power line as the file server which was totally smoked," said Zeigler. "In fact, through the smoke, the operator of the APC-

linked computer called out, What happened over there? I'm getting a network error?!" "Fortunately, our phone system was also plugged into APC, so we could still make calls! "said Zeigler. Now when anyone tries to cloud his power protection plans with misleading claims, Zeigler's got an answer.

"This was enough proof for us," he said "We traded in our old Unison units for APC UPSes along with our new file server, and despite this being a risky power area, we're confident that we're well protected now."

Smart-UPS Saves Data, and I jumped out of bed and ran downstairs.

ecognize the "beep beep" of a UPS alarm a nile away. For users in bad power areas, the warning is perhaps a necessary unitation, but for Yudi Eckstein and his family, the alarm is

As a dedicated APC reseller York Eckstein quotes an APC UPS on all his network servers. He is looking forward to protecting workstations with the new Back-UPS 250.
This Brooklyn-based VAR is the proprietor of CompuAmerica, a leading Novell reseller in the Tri-state area. One night, he found out first hand just how smart a Smart-UPS is.

"I was lying in bed, as asleep as anyone is 2a.m.," said

"Customers

appreciate

the UPSs ...

but not

do..."

Yudi Eckstein

nearly as

much as I

Eckstein.
"Suddenly, my wife shakes me awake ... Yudi, Yudi, that thing keeps beeping!" she said.

"I immediately recognized the sound of the Smart-UPS, and my wife was right...it was beeping ion-stop, like a dog barking in the night.

The Smart-UPS 600 was protecting a 386/ 33 server that Eckstein used in his home office for remote connections and downloads from CompuServe. But he didn't need to even get to his office before he know something was entirely not right. "The lights were flashing then dimming, up and down, bright and dark. Clearly I had a hig problem." He dashed to the circuit box and threw the main breaker, shutting off power to the

Saves Lives! whole house, then called his electrician, who arrived and inspected the house's wiring

"It appeared that 210V was being mixed with 110V on the neutral wire." "The plastic casing was melting through-out the whole house. The electrician told me that had we slept for another few minutes,

there would have been a electrical fire.

"He said we would not have been able to get out of the house," said Eckstein.



R 0

Snake alert...

Strate artist reserve blackout caused in Connecticut by a carp dropped on a transformer from a pessing segul? Well, listen to what competer users in Geam have to deal with: brown snakes whose preferred nocturnal lang-out is utility poles: "Between 1978 and 1990, Suam was let by an estimated 680 snake related outages, in some cases blacking a out the entire island. Exasperated, the Quarr Power Authority wound up larrang off from dask to down a shirty pole that had suffered 17 faults. effectively coding it to the probes - Wall St. Johnson

Cuba cuts current Cube has begun "ratering electricity, cutting work hour and jobs and taking other recesures to survive a crisic measures to survive a crotical energy shortage caused by the lack of Sweet oil. The action shortnes TV transmissions to her hours a day, cuts of streetlights and air conditioning in public buildings, and closes many restaurants and moves. Also, goodine quotast were reduced and trais were limited to belong to the language people to hospitals on the balang people to hospitals on the language people of the people of the language people of the language people to hospitals on the language people of the

ComputerWorld: APC has largest installed hase on LANs Dase on LANS
According to respondents in a recent ComputerWorld study, APC has the largest installed base in the imagest installed base in the imagest installed padesship's LANS. APC is also the imagest in the imagest padesship's LANS. APC is also the imagest padesship in th

the brand most likely to be purchased by the respondents Quote of the year "It doesn't matter how many alternate routes you have if you don't have power"

-Robert Men, Cheirman and CEO of AT&T, after the power outage which shut down La Geardia, JFK, and Newerk airports and

APC Welcomes New **Customer Service**

in addition, APC was ranked will on the Forbas list of the 200 best small companies in the U.S. (Newmber 11, 1994 case), and Forbas featured an article on APC in their February IV, 1992 issue. Those interested in receiving a free invester IAI can sell 1-100-784-7298, et. 3022. Manager Herb Fox will use his years of responsess at IBM and Data General to fine tune APC's customer service operation.

Among other things, Herb will be working to improve our

requests, as well as lead tracking and destribution. Mark Van Name and Bill Calchings, networking columns! with POWeek, recently compried a list of "When was the last time Customers with suggestions can contact Herb at 1-800-708-2208,

New phone numbers, addresses Customers can reach as at our new mass number: 1-900-788-2208 (U.S. and Carada). us at our Pans office: 64625900.

"On the positive side the following equipment survived this power surge my two computers (Mac IIx and AppleIII) were connected to an American Power Smart-UPS 600

Holy tornado! Houry COTHISHOD:
Meather Service, there were 10,000 severe fluodessterres, 5,000 services floods, and 1,000 breador in the United States in 1990. That's more natural deasters than any other country in the world.

APC outpaces peers APC outpaces peers
APC reade first in invator's
flusiness Beigh's telly of the lap
400 competer companies is
erder of enrings per share over
the past five year. President,
CSO, and Chairman Bridger B.
Doudels sell "Piles in the result
of a lot of hard work and a
commisment in providing our
custiments with the lost quality
project. Congrabalations is all." sure to check every month that they're still working. Don't want for a power outage to identify the one with a bad fuse or son other problem."

Columnist Queries

other grothen."

— We saled nor Coffeen Protect
Message, Dong Radiencoler, 100
moreover. This is counted advance, Allough and Comment
and Comment. This is counted and comment and the counted and the comment and the counter of the c

The grand total APC recently received a lette from Mr. Thomas Johnson, of Mr. Johnson writes: "As a resul

of a very senses gover sugs. I had the following damage done to my home..." Johnson estimated the vision of TV and sweler home electrosics damaged or destroyed to total

The surge was so powerful that it uttarly destroyed a marker of surge suppressors, most of which were located by "external electrical fines." Mr. Johnson reconsisted:

Continues:

The the positive side the following apapement survived this poset surgir my two computes; (files III and ApplicIII) were connected to an American Prover Conversion Smart LIPS 600. ** Another TV and 2 YOT's connected to enforms surgir suppressures also surrivived. Smart advice

in their review of 166aseT Wiring Centers, PC Magazine pointed out how emportant ponted out how emportant backup power is to international devices. "In 168aci installations, the winning centers need backup power. If you provide 255 support for your sorvers and client PCA, you must also retail back PCA, you must also retails become for the winning centers to ensure continuity of operation."

Knowledge is power APC recently received the following letter from Hugh Rich of FPG International:

"I'm writing to tell you how empressed I am that your company devoted the time and tachescal resources to publisher your 18'S power supply

Even as I write this I am waiting for an electrical contractor to come and re

the butteries in our ITT units, it bried the acid last last Sanday and yasked the power cord, (set as about 14 months old, Result less than 3 seconds of gover (count fun) before the whole systems shall off. Front panel shows all the right lights

If I has through this and still have a job, the next UPS I spec will be yours, or the competition will have to grow mightily in the

"See listing of APC Tech Notes in this revealetter, Customers should feel free to call Customer rvice and order copies

Test your batteries
if you've had your UPS for mon,
then there years, please make,
save in toot the unit's business
on a seetab please, for
urformation on trading in older
units for new Smart-UPS or
Back-UPS please call 800-8004272.

New Vice-President of Sales
Ass Davis III has been
elected to the newly created
position of Vice Precedent of
Sales of American Power
Conversion, in his new

coversion, in his new apocity, Ass will be creating programs to help the company's dealers and distributions sales efforts. Customers with suggestions can match him at ex.

APC ...

Protecting Workstations Adds Reliability to LANs

Certainly, the idea of protecting the nodes on a network is not a new one. For many years, Novell's position has been quite clear: "We strongly recommend that you use UPS protec tion for network workstations...to receive mes-sages from the server, the workstation must get ower from a UPS."

However, it wasn't until the introduction of the Back-UPS 250 that the asking price was low enough and the performance levels high enough to make protecting workstations a reality. "At just \$139 suggested list (U.S.), the unit is a perfect fit for workstation protection," said Dan Shramek, Back-UPS Product Manager. "Since the Back-UPS 250 will run a typical 386SX with VGA for about 10 minutes, the misnolonger Can lafford to protect LAN nodes as well as my server?" but 'Can I

afford not to protect my LAN nodes."

Many leading companies believe protecting workstations is quick, easy, and immediately cost justifiable. At DuPont in Delaware, Back-UPS 400s protect QNX nodes used for software deopopenen. At Health Trust, Inc in Texas, 17 Back-UPS protect every node on the company's Novell network. The benefits these companies experience are real and immediate. et-justifiable. At DuPont in Delaware,

End-user benefits

For example, LAN workstations protected by Back-UPS get:

■ Complete local data protection. The file the user was working on will be safely retained

"Since we've had the Back-UPS on the nodes. we're sailing right through the outages."

Steve Bingham, Systems Enginee

Ability to continue working through outages. Most outages are of short duration: ■ Ability to continue working through outages. Most countages are of short duration; taining a Back-UPS can increase overall productivity by allowing users to work through these disturbances without thutting down. In California, Respiratory Care Professional and factor this care problems rourning, sporadic outages lasting just a few seconds. Ac-

cording to co-owner Ms. Abby Rosenberg, "Our business is next door to some glass engra using 3 big electric water heaters. Whenever they kicked in, they sucked up all power, and Rosenberg's business depends on an AppleSh network of Mac Classics for billing and acng. She shopped around, and settled on

a Back-UPS 250 for each one of her network BENEFITS Complete local data protection.

ality to continue working rough outages.

superior protection from surges

oception of important warning researces from the server.

Heips eliminate "No-fault found" calls to your help deak. Keeps users happy.

Protects network data integrity.

nodes. "Now when the power goes out, the UPSes work great!" said Rosenberg. "We just keep humming along," Superior protection from surges and ov-rvoltages. The historical rule has been "put a

UPS on a server, and a surge protector on all workstations." But now, for about 25% more dollar investment, users can benefit from the superior surge protection of a Back-UPS, full battery backup, and the APC ARSOLUTE

Reception of important warning a sages from the server. Without UPS protect on the workstation, the users will not re warning messages from the server and will not be prompted to take actions that are an important part of network fault

tolerance.

Network manager benefits But users aren't the only ones who can

nefit from protecting LAN worksta When an outage occurs, confusion and fing pointing is the order of the day. For administr tors, protecting the LAN workstations:

■ Helps eliminates calls from distraught users who have lost the report they were prepar-ing for the boss. When an outage occurs, you red to make sure your security plans are ecuted, not spend time explaining to callers executes, not spens time expansing to caners
that no, there's no way to get their data back.

##Helpseliminate "No fault found "callsto
your help desk. Often times, power problems
are the most difficult to track and diagnose. In

many cases, the cost of a Back-UPS is less than many cases, the cost of a next-075 is sees than the cost of an hour of a consultant's time. At Central Wyoning College, Director of Computer Services Beett Spengler, believes APC protection is so reasonably priced that just one

incident can deliver satisfactory return on inrestment. "We don't take chances with our network. Everybody knows to protect their server with a UPS, but in our case, that's just not "We have Smart-UPS on our file servers, Back-UPS all around the campus, and Back-UPS 250's on workstations and different

ernetworking components. The units are doing a great job."
Choosing APC was straightforward for Spengler. "I first saw the PC Mag review where APC won Editor's Choice award, it was the combination of quality and low cost that sold

"We have some of the worst power in the orld here in Wyoming. Maybe the worst ivers too," said Spengler with a laugh "Just



last week, two different cars hat the same telephone pole nearby!"

Keeps users happy. A happy user is likely

to complement, not complain. When the network stays up, and local data is kept intact even though the lights may go, users (and upper management) recognize the administrators expertise in preparing for the worst.

expertise in repairing for the worst.

Seve Bingham, Systems Engineer at Coos-Head Forest Products, knows all about the necessity of protecting the complete LAN. The Oregon company exports high-quality lumber

to the South Seas.

"We're in an area where we lose power frequently; a few months back there was a power problem where we lost a complete day of work, plus some data on our hard drives, and this was very with surge protectors on the line," said Bineham.

It was a tricky problem that needed a reliable, cost-effective solution. Bingham opted to protect the whole herwork, with a Back-UPS 250 for each node. "My problem is completely solved, Since we've had the Back-UPS on the nodes, we're sailing right through the power outsper," said Bingham.

Detergers, sant compared.

■ Proceeds LAN data integrity. Particularly
in distributed database applications, UPS protection on the workstations is essential, since
the most recent work may not have been performed on the server, but on the workstation.

A crash there could damage or destroy the database even if the server is protected. Worse still, data corrupted on a local workstation could be rewritten over good data on the server.

could be rewrittenover good data on the server.
At Dime Savings Bank in Berooklyn, David
Nebon does daily barthe with power problems
in a metropolitan area that some would argue
has the worst power quality in the US.
"Recently, we were closing some financials

when we got hit by an outage. It took us two very unpleasant days to recover," said Velson, who responded to the problem by specifying Back-UPS on the network workstations." I went shopping for reliability, and price was paramount. Ikinewmy boss would have a hard

"I chose APC because of reliability and price," said Nelson. "For the price, you can't beat the protection. Without it, not only could we lose the 300-400 entries made each day, but our history files can be affected, and we could lose them too if they're not backed up."

■ Keeps network accessible When an outage occurs, you may be on the other side of the building. APC's PowerCluste software will reasure that your server shust down gracefully. In addition, you may want immediate access to the state of the network, without spending precious moments searching for a terminal or

workstation to access the server from. Also, for on-line data processing or unattended data polling, all components of the network must function properly. You may discover after the fact that vital information did not make it to the

gone down.

At Lee Rowan Company in St. Louis, MIS
Director Dave Klutinis specified 12 Back-UPS
for a data-collection network. * We are a
manufacturing company installing IBM Data
Collection Terminals to track time and atten-

"We strongly

recommend that you use UPS protection for workstations..."

MNOVELL

nce of our approximately 1000 employees,"

said Klutinis.

Klutinis considered all his options before settling on the Back-UPS. "We found these

were thesize and the price we wanted. We tested each one of them and they work great. The Back-UPS were installed, and their performance gave Klutinise ven more cause for striked in the strength of the striked in the striked in the striked with the the want less Back-UPS will hold a terminal up for 2 1/2 hours. With such ideal protection art such a reasonably be they may about 30 more.

fact that vital information did not make it to the collection point because a link in the chain had gone down.

Senator Praises APC Quality



Looking out over APC's hamming factory, Sen, John Chatee (R. 85) exclured: "This is truly wonderful, Yo raisely see a factory that's so clean, and as busy."

Like many members of Congress, Chatee is focused or increase one wars to improve American competitives.

Like many members of Compress, Chaffer in Sociolo of learning man surpris in improve American convolutionesses, members, and its war ARC's reputation for mississical attracted the similar. "This base controlled published in the mississical production of the production of the control free base controlled published protein of best of the globe, accluding the For East and signs. All of APC's CSC systems or membershaded in the Winder Stone.

IPS systems are mentiocland as the tineted States.

"You are copaling pits and in longing the canoning," said Chartee, who approved probability interestant in the Company's stringent quality control programs. The Company's stringent quality control programs. The States let the grant with a harmon fine Stanta IPS contain let the grant with a harmon fine Stanta IPS contain let the grant with a local mention of the company in the stanta of the White those of Departmentatives, the Stanta and the White House of Departmentatives, the Stanta and the White IPS contains and the White IPS co

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Call 880-8004APC today for your own copy. Tech Note #2 - The delivered types of UPS systems. Tech Note #2 - Uninterruptable power, fact or fiction Tech Note #3 - Surge Suppression (M91) Tech Note #4 - Contral vs. distributed protection for Tech Note #5 - What Incomes when the utility hale.

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IN EUROPE CALL Paris: 64625900 FROM LATIN AMERICA 401-789-5735

S. America Suffers Power Crunch

(UPI)-Guatemala, Nicaragua and El Salvador recently raponed electricity because of a lack of rain needed to power hydroelectric plages, and each nation blacked out parts of its

population on a rotating basis. Different parts of the country were without power for two to there hours a day under the remala is in the midst of a 30-year civil war that has taken an estimated 120,000 lives. Rébels often cause blackours

by deservoing electricity infrastri An outage caused by rebels earlier this year hurt industry

in the capital and caused traffic jams due to a lack of power for Nicaraguan government said it would begin a new frazioning due to the shutdown of several power plants The Nicarap

and a lack of capacity at others, Things were supposed to change, at least we thought we would have electricity to watch soap operas," said Carmen Alasia, 65. "There are come from had to worse."

Squirrel Gets Surprise of its Life BOISE, Idaho (UPI) August 20, 1991-A squared crawled

into an electrical substation and caused a short circuit that temporarily cut power to almost 10,000 homes and businesses this weekend, authorities said. The outage began Sunday morning when a squirrel got into transformers, causing a short prese that led to a nearly two-hour outage for 4,585 customers. other 5,187 customers lost power for about six minutes, a sman for Idaho Power Co. said.

The squirrel was electrocated, and utility crews said it took some tune to pack pieces of the animal out of the electrical equipment, which is why the outage lasted as long as it did for

Power Woes in the Windy City

CHICAGO (UP) July 20, 1991-Com milet Edison Co., smarring from a study of last semmer's power blackout that policies, plans to install smoke detectors in its older substations to help avoid a repeat, v officials said

The four-month study released Finday blamed Edison's reuse of old equipment, failure to establish adequate fire plans and poor preventive maintenance for turning a minor fire into a manage dis server last are

A July 28 fire at the Crawford Generating Station left about 40,000 West Side customers without electrical power for up to three days, triggering a rash of looting in the Saturday right darkness. Three people were killed in a fire caused by a candle

being used to light a home. The study ordered by the Illmos Commerce Commission sed to coe the utility for repligence. It said Edison used an old electrical relay developed in 1938 and installed as 1988 to replace a worn component. The relay, which is a huge circuit Has your area been hit by a major outage? iet us know. If you fax a news story within 48 news story with hours after the outage we'll send you a free APC T-shirt!

dramatic (below)

the decade

in the US may have extremely det.

renestal effects on the quality of

gower we receive as we move through-

power utilities have left over when been demand in sections

shraking across the country. At

nava menfectable rushmen like

brownouts and blackouts are

sure to follow

Trees more into conacty defeats

breaker, was not protected by a dast cover and the insula on power cables installed 67 years ago had rotted away. Big Apple's AT&T loses juice

NEW YORK (UPI) September 18, 1991
Hanes were flying at all three New York aerports Wedness
spronting, the day after a power fashure in lower Manhattar
disrupted are travel and cut some long-distance telephone service

The power failure at an American Telephone Co. sweeking stateon in lower Manhattan started at 4:50 p.m. Tuesday and kept a large number of long-distance calls into

and out of New York as well as some international calls from is power quality in the United States getting better or worse? Pes AT&T said full power was rescored at 11:50 p.m. Tuesday smism appears to be well-founded

and long-distance traffic was flowing normally into and out of Manhazan Wednesday morning. But more frustrating for the traveling public were the long delays or cancellations at the three According to a recent study by Contingency Research, the increase in companies reporting disruptive metropolitan area airports. outages has been nothing short of

A Federal Aviation Administration spokesman and our-going traffic at LaGuardia, John F. Kennedy and Newark airports stopped as of 4:45 p.m., but resemed sporadically hours Their findings echo a study by later as some places were able to depart.

"It's all back to normal this morning, except th Computers te Engineering (right). which showed that utility overdemand

acklog of passengers, "said FAA spokesman Doug Pardae. The scuppion in phose service affected air traffic costrollers' siley to talk to pilots, and link radar readings with flight data domestic planes, which were delayed or diverted.

Toesday's power failure was



vice in New York City in less than two years.

the these

The District's Power Deficit

WASHINGTON DC: Jan. 9, 1992—"A massive electrical failure blacked out most of downtown Washington, Georgenown and parts of Southeast for about two hours during presently evening's risk hour, halting traffic, trapping many people in

elevators and bringing an unempected end to the workday for thousands, "read the front page of the Washington Post." According to PEPCO "The blackost— possibly the largest ever to be the cay-was caused by an une

planted failure that effectively shut down the Potomac River generation plant in Alexan-dria, a main source of the city's electricity. "For many the first signal of the crisis i come was a gradual distreng of the light. It was like a brownout at first," read the report

from the Post. According to PEPCO, at least 80 people were reported trapped in elevators during the outage, which affected more than 18,000 cus-



New lower prices on the world's best-selling network protection!

FAY-

Thanks to high-volume efficiencies, APC is again passing on savings to our valued customers. So if you've always thought the benefits of an APC UPS were out of reach for your budget, think

\$50-\$200 off the line-

interactive Smart-UPS The line-interactive Smart-UPS have been chosen by editor and end-user alike for their unmatched reliability and performance. Now they're even a greater value!

The "Best Value" Back-UPS now start at just \$139

The Back-UPS are known world-wide for unmatched reliability at an unmatched price. Check out the new Back-UPS 900 and 1250, for

r undisput	ed best value in LAN protection!	1 70000
E-LIPS (VA) 150 100 150 100 100	Application List (U.S.) 3845X, 286 nodes, interest deskeps 346, 486 systems 229 tower servers/wistations 3279 CAD/CAM withautions, servers stadigly servers, ridecom 5599 mildigely servers, ridecom 5799	City/State:
1250	minis, multiple servers \$799	Happy customers .

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off Ri	ESELLER DEMO	PROGRAM
YES! rd like	to learn more about APC's 50	Operating systems sold?
PC's products i	first-time resellers. Trying any is quick and easy, Just fill out to NPC rep will contact you to get	he Number of Lives sold per mon
below and an A ted on the road	to reliability!	UPS systems sold/month?
re	Title	Brand of UPS currently sold?

YES! I'd like a FREE 1992 LAN Protection

Brand of UPS currently used:





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Meand the database that the ability that the

PowerChute PLUS Saves Client \$14,000

"We had a client whose network was acting completely flaky," said Kelly Osborne, As former Vice-President and President of the Atnta NetWare Users Group and bost of

software to diagrees the clear's power problems. Digest* on the Discovery Channel, Osborne knows his networks, but

even this had him stumped "As a manufacturing company, they couldn't af-ford any downtime on the LAN. But although we had of course protected the server with an APC Smart-UPS, the other machines on the LAN would reboot mysteriously. In this particular application, we recom-

mended PowerChute PLUS."

PowerChute PLUS works with a Smart-UPS to diagnose power problems on a LAN. By tracking both data (such as high voltage, low voltage, frequency etc.) and events (such as "blackout at 9:30 am"), the software gives a network admir nistrator instant return on investment for the UPS, and the reseller instant proof that the problems a customer may be experiencing are linked to the elevator or copy machine, not a

alty configuration or improper installation.

Osborne recommended turning on PowerChute's

Q. Does Horners

Monthibring?

A. At this part, Road's only sits peer to per
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with support that support all reaches Artest

Artest Committee (4.5 however)

Artest Support (4.5 however) Q. Does Novell's NetWare Lite support UPS

Q. Have any communication standards by adopted by multiple UPS vendors? Has Novell created a UPS communications standard for NLMs or NetWare?

—Robin Hunstler, Network Engineer, Marathen Oil . No UPS/PC standard has been adopted by multiple UPS endors. Each UPS weeder uses a proprietary signaling at the data log and taking a look at the power.

"The log ran for a few days, collecting data at five nute intervals," said Osborne. The next weekend, wever, a disaster occurred

"Something came in over the wire and blew just about everything in the place except the server pro-tected by the Smart-UPS. The network was down, data possibly lost...The place was trashed," said Osborne, He and his team were called in to find out what caused

the problem and to get the LAN up.
"We immediately looked at the data log and it was completely in the red...the voltage was either much higher than normal, or much lower, just swinging wildly," said Osborne, who gave the log to the client.

"Fortunately, PowerChute PLUS helped us quickly and

cost-effectively pinpoint the problem..." Kely Osborne

"He used the log to prove to the utility and his surance company that the power line had been sponsible for the problem. A settlement was reached responsise for the protects. A sectioner was reasses-between the groups and the client received a full reimbarrement for the damaged equipment, "said Obsome, now with leading system integrator Syntrex, "In a situation like this, the danger is not just the data loss and damage, but the two days the network was down. Although the reimbarrement was for \$14,000, I'm sure the cost of downtime was significant. These people were just twiddling their thumbs ... Fortunately, PowerChute PLUS helped us quickly and cost-effec-tively pinpoint the problem." tively pinpoint the pro-

Fax meetions to 401-788-3710.

PowerChute offers:

Unattended data

Unattended water protection Preventure units (AM uses of power problems then automatorily closer year the september of the second problems then automatorily closer year of all vibil date indict, flootics self-closer year preventing agently. Preventure is a grant produce which are sometimes countrolled or are attempted by entitled staff. PowerChots

Tracks power quality for instant ROI PowerCrust PLUS takes the mystery out of LAH diagnostics. Does the work of an electrician

Scheduled tests
With PowerCrute FLUS, you can
fell your Smart-DPS to test
food automatically, at scheduler
secretals. PowerCrute PLUS
alects you to any problems, you
can even use the software to
schedule have seen used to see and

Easy installation n just a few keystrokes you add the reliability of erChute PLBS to your LAN.

SCO Saved, LAN Leaders Protected

Standards

Leading companies choose reliable APC protection as their corporate standard!

Rohm & Haas Merril Lynch Chase Manhattan Kraft General Foods

Hydro Quebec Corn Coin Foto

Aetra insurance

Smith-Kline Beetchum Standard & Poor's General Accident Ins Bankers Trust

House of Seagram



business day as you are on your vocati The Hollywood Wax Museum uses several Back-UPS on stand-alone PC's which perform word processing and accounting functions at the Museum.

APC has the largest installed base of desktop UPSes in the world. As such, you're as apt to run into them during According to Manager Kabir Sundher, power quality in the area used to send him to Heartbreak Hotel, but with his Back-UPS on the job, everything's running like a song.

Elvis' Secret Back-UPS...

exhibition hall went completely black, and everyone began to cooh and ahhhhl".

"We had a prime location at the front entrance, so as people filed out, we got lots of attention because our Trade shows are especially vulnerable to power sturbances because the electrical wiring is temporary and often put together quickly. Moreover, the shows are most often in metropolitan areas with lots of demand on the utility. Not only is the power very

half dozen computers were all up and running on APC
Back-UPS 1200's and Smart-UPS 600s.

The light coming from our computers was the only light as far as I could set!"

A transformer bad gone down, and the rest of the trade show was cancelled, but Loe and numerous other attendees

that you should ALWAYS have a UPS on your com-puter, particularly in a trade show situation," said Loc.



vulnerable, but the application is espe-

cially critical. Since companies spend bundreds of thousands of dollars travel-

ling to the show and preparing their

booths for the best presentation to pros-pects, downtime is often even more ex-

had this illustrated in a memorable way.

sive at a trade show than it is at a regular busi Eric Loe, Manager of Technical Marketing at the Santa Cruz Operation (SCO) (vendors of SCO Unix)

While exhibiting at Unix Expo in Manhattan at the Jacob Javitz Center, the power for the entire city block went completely dead during the third day of the show.



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PCExpe	3030	New York City	June 2325,1992

latest and greatest New York City Sept 22-24,1992 001345, 1900 from

Come

see the

APC cleans

Amoco carpeting and more,
"Our power out in the
plant is very dirty," Shane continued. "We need UPSes on all ses can create tricky power problems, and therefore all entscal equipment should be protected," said Gary Shane, noco chemical plant in

LIMS System Manager at the uston, Texas. Not surprisingly, APC units are a familiar site across the nine-building corporate

"We bought all our APC equipment when we installed a new fiber optic cable system We put Back-UPS 1200 Rack ment, and when we had a major shutdown about a month ago, we had two and a half hours of phone and net-

Rack-recented Back-UPS protect Shane's LAN from a "den" manufacturing facility.

work access," said Shane.
"Now we have the capability
for an orderly shandown of the

The plant's main product s polypropylene, a ubsquarous material used in coffee mak-

ers, plastic sheeting, polyrope, 1200 keeps all the ma

critical equipment, so we're also using APC UPSes on our Novell fileserver along with the mouseport cable for autone shutdown. "We also have them or

concentrators, multi-plexors and our IBM terminal com-munications - the Back-UPS ment PC's on line."



Call-IIPS Connects

APC Prevents Mac Servers from Getting "Juiced"

the newspaper business," said John Melendez, Sysser, "it's often only

15 minutes from the download line to the Mac to press...There's not a lot of time to have a power

perss. I here's not a not or more to mave a power discuption," and Melender.

In 1990, Melender's group helped introduce color images into the paper, which brought with it new challenges. Challenges like intergrating existing tech-nology and equipment with the latest in decktop publishing and image processing. Challenges like mak-ing sure the new systems that would help them usher in a new age for the paper stayed up, running, and reliable. As part of this process, color photos from the Associated Press are downloaded over the phone lines and stored on the paper's Macintosh image file server. "If the server goes down, our color would be out

until we got the server back up," said Melendez. "When you move to color you make a come your advertisers, your readers. It's important to keep

at commitment to build your readership."
"When you're on a deadline, damage to the hardware or loss of any data is completely unacceptable," said Melendez.

Melendez turned to APC for protection and peace of mind just after the 1990 San Francisco earthquake. He has four UPS 370ci's and a UPS 110SE protecting

He has four OPS 3702's and a UPS 1108E protecting the Macintosh server and several external drives. "Although we back up our servers every night, this is a business of minutes," said Melendez. "The APC units help things stay right on schedule."

This is a business of minutes..



The Line-interactive

Advantage:

perior Reaction

they charging is provided by erabing the inverter in reverse on the input AC power is mail. When the input fails the switch opens and the power flow is from bettery to the UPS output. The inverter is always nected to the output, inding additional filtering and

uperior Regulation The inverter provides corrects becoment conditions which would force a standby UPS to switch to biddery. This allows the Smart-UPS to operate at sites with

Sherlock Ohms Q. What does "line-interactive"

mean? How does this compare to

standby or on-line UPS systems? "Line-interactive" describes the high-performance operation of an APC Smart-UPS. It refers to a new topology that combines the best feature historically associated with a standby UPS (namely reliability) with

the regulation performance historically associated with an on-line. Design characteri rice inch ■ The battery-to-ac nower converter (inverter) works backwards to

charge the battery. ■ The inverter is always connected to the output of the UPS



ne-interactive design rates the potential of sing failure and effectively

This topology is inherently we efficient (approx. 59%) which ts, and operate at ducing life-cycle costs 307 ner than that of a line we UPS. Worse stdl

■ The inverter only handles the load power when the input power fails. When the input power fails the input is disconnected using a transfer switch

The inverter provides filtering and regulation during normal operation even though it is not supplying output power.

The bottom-line benefit is superior perfe

without any sacrifice of reliability. In fact, UPS reliabil-ity is directly related to the oumber of nower semi-onductors in the power path. A typical on-line has approximately 12 of these components; the line-inter-active Smart-UPS just four. Evaluated using U.S. Military Standard #217, this means the Smart-UPS will

enjoy a MTBF three times

that of an on-line.

Q. I need a surge suppressor for my printer... What should I look for?

Transient Voltage Surge Suppressors (TVSS) are the most economical and most popular form of power protection. However, not all surge suppressors offer the same performance, and a UL rating does not necessarily imply superior or even adequate capability because the "protector" in question may be UL-listed as nothing more than an extension cord. Here's a few items to look for when our chasing a surge protector.

• Joule Rating: Joules are a measure of the unit's nergy dissipation capabilities. The higher the joule uting, the higher the level of protection.

■ Protected Lines: Three pathways are incorpo-rated into all (domestic) standard wall outlets: Line, tral, and ground. To truly protect your equip a high-quality surge protector must provide on all three lines: L-N, L-G, and N-G.

■ UI. 1449 TVSS Rating: The UL rating for surge appression devices is #1449. All other UL ratings are extraneous to this basic rank. Here, the lower the voltage rating, the better the protection. The rating itself has broad categories, bowever, and this can be a

mell' las l'avoid categories, lovevere, ne di sica to be dipième de decimente, na product hat coron at the high end of acanguny for example 3 3001 may have endoutantial en de la categorie for example 3 3001 may have endoutantial en de de la categorie de

or minot anowing that you will not have to replace damaged equipment is worth the premium.

Mades-stage protections: Single technology suppressors are often good at stopping only one type of trainsient. For instance, they may stop spikes, but have trouble with surges or EMI. Unfacetypical, single MOV or diode based sup-

APC'smulti-st APC'smulti-stage sup-pressors provide the ulti-flate in AC line protec-

tion. Each APC unit has

achieved the heat UL 1449 TVSS Ratiog of L-N 330V, L-G 330V, N-G

330V, which insures full

protection from da



LA NACION "Downsizes" UPS

As corporations reap the rewards of greater perfor-ince at lower cost by downsizing from mainframes networks, many are also seeing the advantages of a pwnsized, distributed power protection plan.

Recently, the largest newspaper in Central America (circulation 120,000+) saw firsthand that one large UPS is not always the best solution. As the second largest corporation in Costa Rica, time is money for LA NACION. Operations run 24-hours a day, with information gathering and printing equipment powered by a DEC Microvax cluster.

One evening, during peak paper production hours, their 60kVA central UPS went down. Needless to say, MIS Manager Emelia Pozuelo was quite upset. This meant that their network, photo scanners and expen-

Distributed protection a

better choice for those contemplating a large UPS

sive printing equipment were completely unpro-tected. Her frustration ap-

proached fear when she iscovered that it would take a number of days for the large UPS to be fixed! LA NACION turned to supplier Datagrams, who immediately sent

UPS 1200s). Pozuelo had her peace of mind: "The newspaper was back up and running within fif-

teen minutes. LA NACION was published three days in a row thanks to APC."

three days in a row thanks to APC."
"The moral ofthis story, "said Dan Shramek, BackU/S product manager, is that bigger in not necessarily better where U/S systems are concerned."
"Oversized U/Ses mean higher freights and installa-tion costs, additional costs for dedicated wiring, and long repair times," said Shramek. "But most imporlong repair times, "said Shrames." But most impor-tantly, one large central UPS provides no redundancy. If the unit fails, it takes everything with it. In contrast, distributed Back-UPS are quick and easy to swap out." That fact is not lost on LA NACION.

That fact is not lost on LAAGON. We'en one lossing must decentralizating our UPS protection, putting APC UPSes on all our critical compares and equipment. "Mr. Possubo continued, conceptured and equipment." Mr. Possubo continued, custion systems we are installing."

The fact that the systems are portable, reliable and reasonably priced makes them particularly valuable in action installing the possubor and the systems we left," and Marco Kinolo, Persident of DataCorama.



licated wiring

No need to oversize

Greater redundancy rotects network Easy swap out

Smart-UPS Serve Hungary

proud to be a part of factoria, the first ty-owned hotel in est, Hungary, since General Manager Zoll



"Our hotel is used mainly by businesspeople," said Palmes. "We pride ourself including the latest and best in services, including the best in power protection. Come see us!"



Smart-UPS, Back-UPS Win Awards as Most Reliable UPS Protection

The fall show season proved busy for APC once again, as seven additional honors were bestowed upon the company and its products, including an unprecedented third consecutive LAN Times Reader's Choice, Several readers have asked us for a wrapup of the awards that the company has won through the years. So here they are!



Perhaps the most prestigious award in the computer industry, PC Magazine's Editor's Choice is a strong recognition of a product's superiority. APC products won the award in both 1986 and 1990, the only two times it has been



Hat trick! In1990, 1991 and 1992, APC received recognition from the readers of one of the largest

circulation networking magazines as the Best UPS for LANs.



COMPUTERWORLD

APC recently won ComputerWorld's "Installed Base" and 'Brand Preference' awards for having the largest installed base and the largest MIS "Plan to Buy"

When the popular LAN Magazine asked the top 100 resellers of networks which UPS they pre-ferred, APC came out on top.



Each year, Reseller Management asks its readers to choose the product and company they prefer to do business with in each product category. JPC has won the award in 1989, 1990, and 1991, every

HWEEK

From numerous product reviews through the years, one in particular stands out." The All-Around Reliable Choice" given to our Back LPS 450. Non recently, columnst Lim Seymour said "the been using and recommending APC for years. Limber Smart LPS are especially a good fit for network use."



APC's Smart-UPS have been chosen System integration's UPS Product of the Year for two consecutive years. In a recent competitive review, the Smart-UPS 900 was "VAR's Choice" for a

paramation MIS readers have nominated APC's Smart-UPS for Product of the Year for two

IAN Technology'92 REFERRED

mart-UPS 600 is) an excellent performer all around... together with top-notch software that goes beyond the basic network interface to offer strong power management and monitoring functions."

LAN Technology, 4/92



ObjectVision eases data gathering, presents information graphically



Ernst & Young

The jury is out on visual programming

Pictures KISS and tell

company is emanaged.

Tom Bass ought to know.

ometions printers in weath of contribution printers in the contribution of the contrib

and effectively. I more just the too much of it.

The challenge of boiling down all this information was daunting, Bess agreed. However, the introduction of Microsoft's Excel 3.0 for Windows in

Microsot's Excel 3.0 for Windows in January 1993 changed that. Microsot's packed the new per-gram with presentation tools that al-low even the densets spreadtheet to he connectically enhanced, when features include three-dimen-nional capabilities, a variety of drawing tools to graphically manipulate charts and a feature that allows a text but to be that allows a text but to the control of the control of the control of the control of the presentation of presentation of the presentation of p

the opposited remoters from soil to recommend the limitally considered men that the control of t

The Exchange System

Bellevue, Wash. Project heed Thomas Base

The Exchange doubted whether so much data could be presented simply and effectively. There just seemed to • Project Distill reams of comple information down to a

• Tool esed Excel 3.0.

Another plus of the Excel 3.0-based system was how easy it made writing applications. The bourly re-port application, which was made with Excel 3.0, took one mas-month to complete. By comparison, the min-tu-by-minute data, written earlier without Excel 3.0, took six times

longer.

Writing the application, called Exzam (see story below), was a snap,
developer John Lee said. Exzam was
built using the standard Windows
Software Development fix and Microsoft C language development
tools as well as Novel, Inc. 18 Brieve
database management system.

tools as well as Noved, Inc." a Street
database management system.

The Exchange also uses Excel
an available outsile grand livelive and a street outsile grand livelive and street outsile grand livestreet outsile grand livecan collapse appreciablest to control
to level of extel in order to protect
summary reports. Consolidation
brings similar information from different worksheets into a summary
speciablest. Exam users can cick
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speciablest. Exam users can cick
served information.

"I can see trends now. I don't have

ers of information.
"I can see trends now. I don't have
to dig for them," Bass said. "Excel
changed the way I managed the company. We're asking questions we
wouldn't ask before. What other systems can help you do that?"

mes Daly is a Computerworld West



More than 260 financial institutions throughout the Northwest — from Southern Oregon to British Columbia and Idaho — count on The Exchange to manage more than 80 million electronic funds transactions a

day,
In a sense, The Exchange is one bugs information systems department on the compared of th

gearbox.

Because be follows the old KISS
(Keep It Simple, Stupid) adage, Basis
goal was to show complex data in a
nencomplex way. Already hooked
into Microsoft Corp.'s Windows envi-ronment, his solution came down to
Microsoft's Excel 3.0 spreadsheet
and its dearing eraphics. and its dazzing graphics.
"I'm not a power user — I'm a power needer, so I try to get as much

power needer, so I try to get as much data out of the system as I can with a mouse and one finger," he said. "I've got better things to do than spend all day building a spreadsheet or learning how to dance around an

the number of ATM transactions.

By the time the books reached
Bass, they were so out of date they
were practically useless. "Monthly
reports just don't make it anymore."
he said. "I need to find out what's
happening now." Yet some people at

Exzam passes with flying colors

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The beauty of using graphical elements to make case out of a wall of numbers is quickly apparent. On

one quick acm, Bass looks for "bad guys," or ATM taking more than nine seconds to complete a transa-tion. These cells are colored a deep red on the across Cells that giow a pile bits are on their way to comit under Bass' steely gaze; they represent ATMS that as up and running host not at an accorpise speed. Bass said he likes Exams because it gives him control to the are set attained without interpretation. nce to look at raw stat

chance to look at any or and or a visition.

The to how which print on the print of the house of the first how which print on the print of the house of house of the house of the house of the house of the house of the

door down there."

Base continually monitors Exxam from both the PC in his office and the one on the best where be lives — "my executive war law limm," be call it. Perhaps in sancked flig Brother, but be down it think to ," if wast people to know T in a watchdog," in said. "I yeast people to know T in a watchdog," in said. "I yeast people to know that I'm looking at the data, but I don't wast them to think I'm brothing down their neck. I want them to think I'm brothing down their neck. I want them to think I'm brothing down their leave some making this company.

Notes records 'fables'



n's Larson-Hughes: Notes improved data flow among employ

inneapolis-based Har-mon Contract W.S.A., Inc. has turned to a Mi-crosoft Corp. Windows version of Lotus Devel-opment Corp.'s Notes groupware and development plat-form in an effort to help spread the success of its top sales office compa-

In wide.

The clusive success factor for Harmon, apublic company with 1990 to 1990 to

at the same time separating perti-

nent business information. One year later, the process is in full swing. Harmon tapped Notes to build an application to improve the flow of information among workers.

Of the SSO people companywide equipped with PCs, about 250 are now logged onto the Notes system. Overall, Harmon employs 1,200 people worldwide. Its main business is the construction of the outside shells for alsyscrapers. According to Larnon-Hagber, Harmon is one of the largest such companies in the world.

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The crace is a companies of the crace

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tertainable,

irm, for help in building the initial sail documents, business card forms of views. Notes comes with tem-tures that let users develop a data-see in just minutes. It took about four weeks to get the ill prototype under way. "Notes is so of the easiest and most exciting welcoment tools I have ever used," troot-lightless usid, explainment.

and databases. "Everyone is excited about the new applications," said Sherry May-berry, a computer applications tech-nician at Harmon subsidiary Nor-ment Industries W.S.A., Inc. in Montgomery, Ab. "Lotus Notes makes it easier to communicate." With Notes working out so well, Harmon decided to standardise on

lisk and an NEC Technologies, Inc.

database. For specific project files, Notes a taches every relevant piece of info mation and enables it for easy recal This adds a level of feetal minimir from other systems. Larson-Haghs said. In the case of a paper memo, the control of the sweet based on the "swe" batton. In a similar fishion, is push-button simple to save, discar or errorde messages.

Nurmon Contract W.S.A., Inc.

· Besiness \$225 million company specializing in large building construction.

Project hood Robert Larson-Hughes, IS director.

Project Develop castom communications solutions for branch offices.

grade, the company has standardized on PCs with a 33-MHz Intel Corp.

wmn Lotus 1-2-3 was to num or seven years ago," he addes Lotus 1-2-3, the spreadshes you developed in the first six were only precursors to w could eventually accomplish could eventually accomplish. L wise, the Notes applications we working on right now are only a nine-stones to what can be done."

Training can be fun



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Chase Manhattan bets the bank on Windows strategy



Not just a pretty face

Hughes division jets host data to users in a consistent fashion



hos' Borry says his staff saves time in a Windows ensire

have found programming ties. 10 ... duced and screen creation is made the Windows-based

For end users, at least 250 of whom are running Excel, the Win-dows environment has provided a

he developers first selected Super-use 4 in 1989. In October 1991, inmation systems brought in Power-lider, a Superbase 4 competior. rry said PowerBuilder offers more citions than Superbase 4 and is sier to work with. For example, easier to work with. For example, PowerBuikler has a runtime environ-ment that allows Berry's staff to cre-ate a single application that can oper-ate simultaneously in runtime mode on multiple PCs. Conversely, Supe-base 4 requires a separate copy of the program to run on every PC, Berry

buy a package of Suberbase 4 and put it on each PC, the cost is dramatically increased," Berry said. Another difference between the

Another difference between use two tools concerns icon creation. "PowerBuilder allows a programmer to create an icon on the screen by se-lecting one in PowerBuilder and dragging it to the place where you dragging it to the place where you want it to be on the user's screen," Berry said. With Superhase 4, you have to injust text commands to create and position an icon on a user'a screen, he added.

The Haghes division continues to use both because it is not ready a standardize on one PC database envi-

roament. Meanwhile, Haghes has developed several data retrieval applica-tions with both packages. In other cases, Hughes downloads data from the mainframe to a network series. On the data. The applications are "front data tree prices for data on our network file servers." Berry said. The user every and of the user of the data concerned for the file of the data concerned for the data concerned from They was the work to an envi-

them. The added.

"Previously, they would have had to use text commands to extract the data from the mainframe." Berry said. "Now they are using a point-and-click of a mouse within a graphical screen. It's easier, especially for new people, if they've used Windows. They don't have to learn new commende."

when they compare them

when they conjuire them with their Code presenting days.

them to analyze their budget, earth on the time it sides to develop the control time it sides to develop the control time of the

users. One Excel extension allows man-agers to assemble a capital finance barger. "What we did was take a cap-tal finance application that was on the maniframe and port it to the PC using Excel macros, Berry said." It's nicely integrated with the spread-sheet. They can do their calculations within the spreadsheet itself," he

Hughes Aircraft Co.

Project head Ben Berry, manager of computer services.

* Project Create multiple Windows applications to provide users with mainframe-based data in a graphical

"Teels used Excel 3.0, Word, PowerBuilder and Superbase 4.

Redirecting data flight plan to desktop destination

touch a key, you should go out to the file server, which would be fed directly by the mainframe," he said. "That' a not what' a happening today." Berry said some of his programmers have mainframe backgrounds, which caused some initial resistance to application development on PCs. When PCs came out in the mid-1980s, it took his

tance there is to developing or mov-as down to the desktop be chalks up

Nightmare Scenario #2

THE RUNAW CASH SUCKER



"Why didn't someone tell me this @\$!?& network would cost so much?"

lot of executives go pale when they see how much their computer networks are really costing them.

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Banyan. Novell. IBM. DEC. and Microsoft® stack up against each other in cost of operation.

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A buyers' guide to tools

You envision the benefits but aren't sure what to buy. These pages offer some highlights of Windows tools in six key development categories.

OOP Development Platforms

ObjectVision Smaller Borland Digitals, International, Inc. Scotts Valley, Calif. Price: \$149.96	Inc. Windows Gold ico Knowledge Gerden, Inc.		Object/1 Micro Data Base Systems, Inc. Lateyette, Ind. Price: 8995	Actor Professional The Whitesater Group, in Evanston, Ill. Price: 8495	
	ObjectVision	Smalltalk/V	Knowledge Pro Windows Gold	Object/1	Actor
Supports or provides distributable runtime or creates .EXE	Both	Creates .EXE	Distributable runtime	Both	Creates EXE
Supports OOP-class hierarchy and inheritance		•	•	•	•
Includes tools for screen design and resources	•		•	•	•
Supports built-in standard database access	•		•	•	•
Supports standard third-party DLL calls	•	•	•	•	•
Supports integrated and interactive debugging	•		•		

DBMS Client/Server

Foster City, Calif. Prices \$1,250	Annecia Interna Garden Prices:	des desail, les City, N.Y. Short at 814,000	Gupti Techn Mexic Price	Park, Call. See	Straine Corp. da Clara, Calif. loc: 8605	Spinnatur Software Corp. Cambridge, Mass. Prices 8605	Priversell Corp. Burlington, Mass. Prices 81,495 - \$3,49
	Omnis 7	diffest	QbyX	SQL Windows 3.0	Superbase SQL Library	Personal Access	PowerBuilder
Integrated report writer	•	•	•	•	•	•	
Integrated debugging facility	•	•			•		•
Compiles to .EXE support		•		. •			•
Runtime required	•	•	•	•			•
Runtime freely distributed		•		. •	•	-	•
Third-party DLL support	•	•	•	•	•	•	•
LAN-based SQL support	•		•	•	•		•
File/record locking	•	•	•	•	•	•	•
Support provided for binary large objects	•	•	•	4.		•	•
Discrete table view support		•	•	•	•	•	•
Embedded SQL	•			•	•		•
Integrated			_	-	-		



Enterprisewide Systems

These products provide an environment for developing graphical user nterfaces for client/server and townsized applications. What folows are just a few examples:

Choreographer uidance Technologies, Inc. ittsburgh, Pa. rice: \$7,500

Chorographer allows nonprogramers to design screens, while me experienced programmers can we specialized application logic. Choographer can call C language, Cot or any standard language code. It communicate with a variety of phorms via IBM's Advanced Program to Program Communications proton, SQL support and Dynamic Di Exchange.

Applications developed under Microsoft Corp.'s Windows can now be compiled in OS/2 2.0 when it is re-

►Easel Workbench Easel Corp.

Price: \$11,900 Nouprogrammers can dev graphical user interfaces for digraphical user interfaces for diserver applications with Easel W bench. It provides a visual devement environment for creating placing dialog boxes and winds. Users can also design vector-be graphical objects and cell text. E Worthench includes an internadebugger and an incremental contrer that recommisses with the con-

The tool set develops applicati for DOS, Windows and OS/2.



Mozart Systema Corp. Burlingame, Calif. Price: Composer module (\$7,000); runtime modules

Mozart 3.1 allows users to be client/terver applications and deop graphical user interfaces that, under both DOS and Windows, It chales a development environme module (Composer) and runtimodules (Performer). It supports tabases including Oracle Corp. s Ocle and Microsoft's SQL Server a DS/2 Database Manager. Person computer applications developed under four from an access both distribe der Mozart can access both distribe



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St. System Integrators, 1974, Computer
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SPECIAL REPORT

Customizable Applications

These are examples of customizable server and front-end tools featuring open application programming in-terfaces (on bolk ends) that integrate with other third-party tools to create a systemuside application.

Notes 2.1 Lotus Bevelopment Corp. Cambridge, Mass. Price: 8495 per node Notes 2.1 is a group collaboration software product for netweeted per-sonal computers. It growfees a vari-ety of capabilities, including docu-ment management, electronic mail, bulletin board iluminosa and develo-ment management, electronic mail, bulletin board iluminosa and develo-mental productions and the con-taction of the control of the con-trol of the co



bedievic, vien.

The district of the problem of the

► Word for Windows 2.0 Microsoft Corp. Bellerue. Wash. Price: 1495 Word fe Windows 2.0 is a graphical word processor. It has a programma-ble Toolbur that casables users to click to indext a paragraph, create envelopes or clean spilling. With the new Drug and Drug, seateness and paragraphs by clicking on the high-lighted text and dragging it to its new location.

Another key feature in Word for Windows 2.0 is the envelope genera-tor. Addresses are automatically tak-en from a document and printed on an envelope.

Bustrations by Jean Tuttle.

Basic Development Platforms

Soothook Asymetrix Corp. Believac, Wash. Price: \$395	GFA Softer Technologi Selem, Man Price: 823	ice, Inc. Ma	inimateles, incationing Pro- storye Corp. rissper, Calif. risses (899), 8-	Visual Be Microsoft Redmond, Price: §1	Corp. Spinner Wash. Softmer	ige, Mass.	MLL	
		Toolbook	OFA Basic	ObjectView	ObjectScript Pro	Visual Basic	Plus	Realizer
Distributable	runtime	•		•	•		•	
Creates .	EXE		•			•		•
Tools for scre and resources	en design s included	•	•	•	•	•		•
Event-da	riven	•	•	•	•	•	•	_
Linear prog model su	remming apport		•					•
Third-party is support	DLL calls	•	•	•	•	•	•	•
Integrate interactive d	lebugging	•	•			•		•

System-Level Compilers

Cre Windows, turbo Passal Windows Sorted International, Inc. cotts Valley, Cald. Prices: 8495, \$240.95		maphial Co-o inft, Inc. shington, N. 1400	Y. Microsom	A Corp. L Wash	High C MetaWare, Inc. Santa Gree, Celli Prices 8796	**	1.0/384, lateom C strom sterios, Osterio fices: 8995, 84	9	ertech yeunstec Corp spertiso, Calif. vice: \$700
	Borland C++	Turbo Pescel	Glockenspiel C++	Microsoft Quick C	Microsoft C/C++ Version 7.0	High C	Watcom C9.0/386	Watcom C	Zortech
Windows front end	•	•	•	•					
Integrated development environment		•	•	•	• .				•
Separate DDL to be distributed with code			•						
Integrated debugger	•	•	•	•	•	•	•	•	•
Integrated profiler			•		•	•			1
Disk space required to install full compiler	47M bytes	6M bytes	Depends on compiler	15M bytes	27M bytes	7M bytes	13.6M bytes	12M bytes	20M byter
Tools to create program menus and dialog boxes	•	•	•	•	•		•	•	•
Graphical environments compatible with the object library	None	None	OS/2, Windows, X Windows and OSF's Motif			None	OS/2 and Windows	OS/2 and Windows	OS/2 and Windows (proprietar
32-bit programming			•			•	•		•

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computing defined. For more informa on Open VMS, contact your local Digital

BUYERS' SCORECARD

Aldus' power of Persuasion ranks high

BY DEREK SLATER

nd Micrografx, Inc.'s Charis

and Macrogratx, Inc. 's Charisma.

The survey's 140 respondents included 62 manager-level users, 46 PC
support staff personnel and 32 end
users. Respondents rated only their
own software package, assigning it a
1-to-10 rating in each of 15 catego-

each category. Scor verted to base 100.

Other areas topped by Aldus' Per-asson include support for import of ta and graphics formats (7.6) and thining of presentations (7.9).

Windows presentation graphics software

Product	Highest ratings	Lowest ratings
Aldus' Persuasion 74	Value for the dollar Outlining Speaker notes and handouts	Speed of program Responsiveness of vendor service Quality of vendor support
Software Publishing's Harvard Graphics	Numeric charting capability Ease of use Text charting capability	Responsiveness of vendor service Quality of vendor support Speed of program
Lotus' Preciance 70	Use of Windows Quality of documentation Numeric charting capability	Speaker notes and hundouts Responsiveness of weador service
Microsoff's PowerPoint	Color controls Use of Windows Quality of vendor support	Test charting capability Outlining Drawing tools and clip art
Micrografic's Classiana 65	Drawing tools and clip art Support for import of data and graphics Use of Windows	Outlining Text editing Speaker notes and handouts

Microsoft's PowerPoint scores highest in two areas and ties with Aldus' Persuasion in another. Software Publishing's Harvard Graphics tops eas of use, which was cited by users as the most important category; however, Harvard Graphics also brings up the rear in both service-related areas [Detailed ratings on next page]



















A CLOSER LOOK

(Windows presentation graphics software, continued from previous page):

First-place finisher Persuasion tops four categories and finishes second in all but one other area. Charisma finishes first in drawing tools and clip art, while Harvard Graphics wins the text and numeric charting ratings.







7.3 Color centrel



7.8 Speed of program



7.6 Text ch



6.9 Outlining

7.7 Drawing tools and clip art





















Verbatim











PC manager 2
PC support staff 4
End user 3
What is your responsibility for Windows presentation graphics software?

vendors119
Determine peed
Set standards for organization - 109
Select vendors102

on one year 23

are you using this product?	•
Slide presentations	93
Paper presentations	91
Presentations within own	
company	89
Presentations to groups outside company	81

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IN DEPTH

Kiss U.S. coders good-bye

Foreign competition will put American programmers out of work unless our development quality and productivity go up and costs come down

BY EDWARD YOURDON

he American programmer is should to share the fase of the dots bloth. By the end of this document is a single state of the control of the control of the control American programmers, systems asalysts and not/ware registers. Not will desinate the need for programming or because user will begin the control of the reason will be far emisser! Low-cost, highly productive, quality international competition. From my with to data processing ergannicions to the U.S. and around the world. In Protess my visit to data processing ergannicions to the U.S. and around the world. In programmers and their managers) do jost programmers and their managers) do jost

programmers (and their managers) do in yet fully understand, deep in their psyche that every product and every service provied by today's society depends on productive high-quality information systems. An increasing number of manufacture reducts their one more embedded.

computer systems — systems that are soft ware-intensive and that have 100,000 or more lines of code. So it's not just the EDSs, the Microsofts

nation as an interpreter immagnetic consumers a sather and developer of the Yourdon method of structured systems analysis and design. This is an exchept from his back Decline and Fall of the American Programmer. Copyright 1969 to Prestice Hall. Reprinted by permission of Prestice Hall.



Irv Wendel, consultant, Oakia Calif.:

Yourdon "blames U.S. programmers for rotten systems, crap code and not having a decent data processing education. Bull. Blame the people who control the situation: management. Management sets the tone and deter-

"Management is responsible for company's (or division's or project's success or failure. Management set deadlines, dress codes, corporate edicational policies and even determines incompetents stay in the company."



- ----

and the IBMs that are at risk; all the Blatzco Widget companies with embedded computeers in their widget products are at risk, nor The companies that face up to this risk will be the ones with world-class software.

More ortical than not The average company spends a minuscule 1% to 3% of its revesue on data processing. But this patry figure fails to emphasize the point that a firm's information technology is its Achilles' heel. As a project manager at the fet Propulsion Laboratories remarked to me a few years. ago, "Software represents only

Thus, the people who build information systems — the programmers, systems ana lysts, database designers, telecommunications specialists and others — play an in consistence couried one in the facest health the

The key comparisons between the worldclass software organisation and the run-ofthe-mill software organisation will be these: > Cost of the staff; salaries and benefits. lity of the systems developed.

American software engageers are consustry sunsware that their foreign counterparts in Manila, Singapore, India, Brazil and other parts of the world typically earn five to die tomos list: comparison, consider the People's Republic of Charac As of Jime 1990, Hong newspapers reported job openings for a programmer at a salary of \$18.00 per month— and this is for a programmer with a college engineering degree and two years' ex-

If you sak the data processing manager is a typical Company in middle America whether he is doing surptime about the situation you're likely to get a blank look or a stong day. "Why should I care if there are programmers in Bangaldesh who make \$1 day?" he? I sak. "They're not here, and her in where I need my programs written. Be nides, they don't speak English, and they'r

Unfortunately, the fact that programmers are "there" rather than "here" is increasingly irrelevant. Today, there is no ntinued from page 111 son why a software development up anywhere in the world couldn't

And is English really that much of an is-sue? Not really: English became a de facto

OPINION POLL

Carol Covin, consultant, Falls Church, Va.:

"Despite increased communica-tions via satellite negating the need for users and systems analysis to sit down together and work out speciations pionity. I have yet to see a project where specs could be deliv-ered and the programmers con-tent and the programmers con-trained by the programmers con-tra

uct...." do not think you can overesti-mate cultural differences between user and programmer. It all has to do with assumptions, and these are difficult enough when you are cross-ing from the accounting depart-ment to the programming depart-ment, never mind crossing country/cultural borders."

guage for the computer industry in the 50s and 1960s as a result of the early elopment efforts in England and the

ut a far more important reason for

U.S. In more important account for the chamisters of Equilibrius the checkment of Equilibrius the checkment alystem. Many of the countries that are now alle to define more alter to define more than the countries of the countrie

foreign software companies that want to concentrate on the design and coding part

The productivity insue
Wage differences are one issue, but by no
means the only one when comparing one
programmer with another or one data
processing organization with another.
Productivity is another key issue.
To the variety that mechanism is in the To the extent that productivity is influ-enced by better programming languages

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M OPINION POLL M

Phil Boward, president of Applied Computer Research and publisher of the newsletter "System Development". There was defined controlling aproach they your prediction will come true. It have some distinguish controlling aproach they your prediction will come true that they have a require to the set true to the true to the true to large, I think they have a negative view of the MSS function as it is now, done insufer primaries in the past, and flooks thethey will buy the legals that it can be done may more successfully elsewhere. Besides, the MSS function generally pra-sents from our than 10 or 20 hr given severes, so the servings work look that

impressive either. "At the MSs level, up measurement already has overwhelming products with Art the MSs level, up measurement already has overwhelming products with good requirements, let alone spees. Besides the natural human deiste to keep one's empire instat. I have a tough time vinualising most MS directors going for this based solely on the economics. The area for average probably doesn't represent more than 15% or of the total MSs badget."

and CASE tools, the American program-mer might be at a slight advantage— simply because the American software in-dustry tends to be somewhat susceptible to new fads and gadgets. But to the extent that productivity is

influenced by common, rigorous use of a standardized development methodology. I think Americans are at a disadvantage.

OPINION POLL

Conrad Blickenstorfer, chief es-ecutive officer, Dormitory Asthor-ity of the state of New York:

"I think that being where busi-ness actually takes place is essen-ness actually takes place is essen-tial. This show precludes the de-mise of American programming. It think the pace in programming, all continue to be set by people grow-inum as the way assure of emerg-ium as the way assure of emergcontinue to se set by people grow-ing up at the very source of emerg-ing technologies, people who are exposed to rapidly changing con-sumer demands, the whims of law-suits and cutthroat competition. That's where our programmers have the undeniable edge."

The American programmer is too much of a loner and a cowboy. Hotshot programmers like Bill Atkinson (developer of Apple's MacPhaint and the HyperCard software) are accorded superhuman status, even though virtually all difficult software projects involve hordes of hundreds of

projects involve lowdes of handeeds of programmers and pottern analysis, recognitions are projections as a programmer and projection and projections and projections are a proposity for last work, I have to any I have not been impressed with the state of the projection and the projection and the projection and the projection and day. The convisced the many compassions play Manta just the many compassions play Manta just a statistics on others producingly by parts before we begin to see large-scale evidence of programming producitivity or parts before we begin to see large-scale evidence of programming producitivity on doubt the U.S. will be at the top of the spectrum of anticolar programming programming prosecution of the projection of the p

spectrum of national programming pro-ductivity rates.

The quelity issue
Obviously, it doesn't do much good to
write lots and lots of software if it doesn't
work or if it can't be easily modified and
maritatined. The quality of software is just
as important as (if not incre important
as important, as (if not incre important
percentact. This, I thou, is a going to be the
key issue of the 1990s — and it is on area

M OPINION POLL M

John Boddle, arbeit of Crunch Mole:

In the Committee of Crunch Mole:

In the Committee of Crunch Mole:

In the Committee of Crunch Mole:

Indeed, there are any proclimations at all. Throughout the designation general

states, programmers and analysis are engaged in a residual state of accessive ap
promination to the required product. In order to join the dance, one mouth to been

proclimated to the Programmer of the Committee of the Programmer in the Public to report to reposit from the manufacturer

of the Programmer in the Public to report of required interest to manufacturer

of the Programmer in the Public to report of required interests and control of the Programmer in the Public to report of the Public

for the program in Kansas City.

"Blowwer, I we can improve our shifty to create specifications (and I believe Chapmans. Now, arrest with detailed disaget documentations and specification for the system to be delivered, the programmin med only to translate the error for the system to be delivered, the programmin med only to translate the error specification of the system to be delivered, the programmin med only to translate the error specification of the system of

16.

where I think the American programmer is at a terrible disadvantage. I'm tempted to say that it's a cultural disadvantage be-cause I see an much evidence of sloppy, low-quality work all around me.

to be put the control and the

una such a navey were men below.

The street were men below.

Let's accept my germine for the moment.

American software is deviseded at highcentify this devised of the street.

American software is deviseded at highcentify this that of several other contracts. Where do use promoheneliz
tents. Where do use promoheneliz
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tents upers to dept uneven. Training, del
tents upers to deliver.

The street of the s

Does my company care about software quality? Does it care enough, for example, to delay putting a new system into pro-duction because its software reliability

modein indicate an unacceptable number (a intent errors).

a Does my company can about its people? Hast it unested time and money to train like it with the contract of the contract number of time to train it at technicated? Does it use modern "performance contract goals are aligned with personal consequences of those goals?

a Does my company use modern programming tools, languages and method-gramming tools, languages and languages and languages and languages and languages and lang

ologica?

Does my company measure everything it does in the software arena? Does it measure be proceed of offware development as well as the final product? Does it have experted to the project size, defects and effort available for all to seef Are the metrics used in a positive way, so everyone in the organization can see how they can improve the concept of the process of the p

OPINION

Richard Harrison, recently re-tired director of the Federal Soft-ware Management Center:

timed director of the Pederal Soft-time Management Conternations, our universities and our generalism con universities and our generalism content of the co

M OPINION POLL V

Melife Page-Jones, Scattic-Jones considers and enter of The Practical to Structured Options Disagric.

In Section 19 1,

of software remaibility? More important, does it provide some incentive — for example, cash regulars — to its software supply, cash regulars — to its software senter? Bain i considered a separate "Software Parts Department" whose only his world be in-create remaible consponents. Does it growthe an adequarity required PC or workstation for everyone PC or workstation for everyone and its sequential properties in a recompany remains used, as if its Bellet in the second properties in a rechanistic "yes," the manter programmer will ophtic his resume. The mant of the arroccione in an extension is not extensional to a recommendation.

mediantwo.

The mart data processing manager will look at the questions just posed as a manufact for change, Few. I say, of the changes cause of the most meltions U.S. software capamistics realize that the change of the most meltions U.S. software capamistics realize that twell the three until the end of this docate to reach "Bend of bend' attent where they care of the part at today." It took along time for most of our expansions to dig themodes used it will take them as fore time of digital transitions to dig themodes units a look.

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M OPINION POLL M

Chris Crawford, game designer and author of How to Progress: The Shift That Will Shaper Foor That programmers is a healthy component of the recent evolution of the American conson, for economy is gooding and to tolkens but the quality of its work force. We are exporting to equality place and tolkens but the quality of its work force. We are exporting to equality place and tolkens but the quality of its work force. We are exporting the configuration of "In the orbivors business, that translates to experting more colleged work and increasing the number of people who to what has tradiciously been called sys-tems mitples."

communitymes...

"I must apologize for the cruel observation that MIS programming has become something of a buckwater. The bright young turks are going into image processing, neural networks, personal computers and other but fields of the "90s. Out off from the supply of one talent, is it any wooder certain fields of software have lost some of their vigor?"

we lost some of user vigors.

"Let the foreign programmers have the simpler coding work. It helps them
ild their local industry, and it frees our programmers to concentrate on the
w industries that the American economy is so good at creating. Everybody



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MANAGER'S JOURNAL

Morris to give keynote

■ Russell D. Morris, commissioner of the U.S. Department of the Treasury's Financial Management Service, will be among the leynote speakers at the fifth annual Corporate EFT [Financial EDI Conference, devoted to electronic funds transfer and electronic funds interchange. The conference of the property of the conference of the property of the U.S. P. Department of the

in Chicago.

The conference is sponsored by the Kensan-Plagter Business School at the University of North Carolina at Chapel Hill. For more inforted to the conference of the contraction of t

w U.S. information services companies lag behind in the European market, according to a top consultant at Arthur D. Little, Inc. in Cam-

George S. Sacerdote, a vice president and managing director, said U.S. companies "have been only casual participants" outside of the U.S. and face an uphill bettle in order to establish themselves in the \$75 billion European market.

m Herbert Spirer has replaced Paul A. Strassmann as the "on-line teacher" of the course on financial planning and budgeting for information systems investments offered by the International School of Information Management (SSIA) in Senta Berbara, Calif. The 12week course is offered via ISIMnet, an educational computer conferencing met-

Spirer is a professor of operations and information management in the MBA program at the University of Connections' a School of Business Administration.

tor of defense information a the U.S. Department of Defense.

"You cannot have in-

employees are usually paid to resist change." N. Doan Mry

H. Dean Me President, NDMA, I

Slashing away at sacred cows

U.S. Patent Office's Giammo challenges conventional wisdom in federal IS structure

BY GARY H. ANTHES

nformation systems manager Thomas Gimmio has worked for 10 years on a math problem suggested by his wife: how to optimize betting on football pools. "I am driven by petite obsessions," be concedes.

conceeds.

But when mathematician Gianamo is not working on that computational conundrum, he is managing the \$900 million automation of the U.S. Patent and Trademark Office, one of the government's largest projects and until recently, one of its most troubled.

Observers credit Gianmo, the S3year-old assistant commissioner of IS at the Patent Office, with turning around the massive project, which had been so badly managed that the White House had threatened to scrept. In the process, be earned a reputation for questioning the conventional windom of low large systems projects should be

"Tom is very imaginative; doesn't deal with the standard pigme," say Philip Kivist, senior president of ICF Information Techogy, Inc. in Pairfax, Va., and a long professional colleague. "As far as government is concerned, be in

At the Patent Office in Arlington, Va., U.S. patents dating back to 1790 are recorded on 40 million pages of paper. Each week, 3,500 applications for new patents arrive, and each must be checked by a patent examiner who searches through wooden "shoe boxPROFILE: Thomas Giammo



Positions Assistant commissioner of IS at the U.S. Potent and Trademark Office

es" of paper to see if an equivalent patent has already been issued.

In 1984, a \$289 million contract was approved for automation of the

namual search and retrieval processes. 'G project sid steadily downhill, with sugets especied and deadlines nissed. Congress complained, and inlependent antitis criticized the Patent office for poor management and the

contractor for producing a "gold-p ed" design.

o manage a large project," says issums, who was brought in to rescue he automation effort in 1988. "The contractor was out of control. They had not sight of what they were doing. Everything had collapsed; there was no Continued on page 117.

Before outsourcing, clean up internal IS shop

BY CLINTON WILDER

o you think outsourcing data center operations always saves money? Think again. Internal information systems shope that cut their own costs can almost always best outsourcing vendors' bids on price, according to Caris Disher, director of Noben Netron & Co.'s net.

Nolan, Norton & Co.'s outsourcing practice. In request for proposal (RFP) situations involving several dozen companies that participate in Nolan, Norton's data center benchmarking service, the internal IS shop underbid the vendorn' RFP prices "100% of the

pected the vendors to win on cost," said Disher, who is based in Nolan, Norton's Chicago office. able savings to be realized from cleaning up your own house. Costs can be pared by automating operations, reducing print activities and especially by consolidating data centers.

hen you've got several data center modidation can really save," Dish id. Scores of firms, ranging for First Interstate Bancorp Avon Products, Inc., lar done just that in the pa

several years.

By consolidating, inte
sal shops can gain econ
mies of scale similar
what vendors can offe
Nolan, Norton has calculed that if a unit process

shop is 25 cents.

Indeed, many of the most prominen companies that have outsourced, in

nental Bank Corp., have done so marrly for strategic reasons. "In the cases, there was no internal bid; it just decided to go forward with an sourcing strategy," Disher said.

sourcing strategy," Disher said.

A company that gains savings from consolidation, however, need not always ignore outsourcing later. Pitts burgh-based. PPG Industries, Inc. signed a 10-year deal with Electronic Data Systems Corp. (EDS) last fall after consolidating its three MVS-based data center and carming high data centers and carming high data centers.

"Even though we had a high-per for mance, how-cost reting for our even for 75 MEDs, how cost reting for our even for 75 MEDs, how cost reting for our even for 75 MEDs, how given by giving the per form to be controlled to the per form to be controlled to the per form to the changing, corporate director of informs ton technology at PPG. "Compared to data center of all airas, we came our only average on the cost scale." See PPG that down its consolidated data center and transferred all of its MVS roccession to EDS.

BOOK REVIEWS

Time for change in business functions

gistical Excellence Donald J. Bowersox, et. al. vital Press, \$29.95

nanagers, the greater value of this es not so much in discussion of IS as in integrating information ogy in the quest for logistical ex-

ng its way among the more theo ections is the fictional story o

fie Change, a manages plore and implement changes in his pany's logistical system. Charle's sadds a nice human touch to the book, istical Excellence also appends a loresource list of university pro-logistics associations and project

ng a Manager:

If I were the bons, I could run things a lot otter." How many times have you heard or even said it? That's because the sai gio is a coveted position, with the freedom to do what you want and the prestige of being the one in charge. Right? Not always, Author Linda A. Hill's research shows that

rs. The first is changing a rom an individual contributor who follows the rules to a manager who must and enforce rules. The second eight

What to Say to Get What You Want By Sam Deep and Lyle Susaman Addison-Wesley Publishing Co., \$8.95 Whether we like it or not, many U.S. workers spend more time with their fel-low workers than with their families. So

nates and finding a happy medium between delegation and control.

Two themes energe for new managers. The first is changing one is mind-set from an individual contributor who follows:

ALAN J. RYAN

Spending up for IS in health care

BY ELLIS BOOKER

CHICAGO — Healthy investments in computerization are still being made by the nation's hospitals, more than a third of which view information systems as a good prescription for containing health care costs, according to a recent survey.

costs, according to a recent survey.

The survey, sponsored by The Health-care Information and Management Systems Society (HIMSS) based here and Hewlett-Packard Co., was conducted by J. C. Pollock Associates, a Princeton, N.J.,

opinion research hrm.
One of the survey's most telling con-clusions was that four in 10 respondents said they had increased investments in in-formation technology, despite the reces-sion. This trend is not ubquitous. Some 22% of respondents said they planned to reshow their PS investments and

percent of the respondents said they had not considered outthey had not considered out-sourcing, and another 15% said flatly that it is not an option for their hospital. Meanwhile, 15% of those surveyed said they had some kind of IS outsourcing

the majority of IS investment will be made in patient care/bes side systems, with 43% specifi side systems, with 43% sp ing this category. This comes as no surpr John Eric Thomas, administ of IS at John C. Lincoln He

& Health Center in Phoenix who was one of 548 health care prosionals polled for the stud "Increases are in areas w

you can save personnel costs — the clinical areas," Thomas said On the other hand, be said, hold

Following patient care/bedside sys-ns were medical records (22%), outpa-nt/physician offices (18%) and adminis

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Slashing away at sacred cows

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Configuration management, terrible documentation — nothing was working."

Giammo says the plot system was plagued with technical flaws. "I thought, I can make myelf look better that by just stabilizing the system." I forced the contractor to fix the problems, I stored the contractor to fix the problems, I stored implementation of new functions, and I have used to fine capabilities. People said, But users need that," and I said, "I don't care."

dollars on these [large

unt are not considered because peo-seed because peo-ser or estains of considered programs, and they're failing."
"Ten has not sway from the job."

TRAVS-SYMENTA

seed away from the Throughout his verfor all and business career, Genome has
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or another interview as verify that they are beading in the right direction," Cox says. Finally, IS managers and con-sultants say, it's generally a good idea for employees to be as hon-sat as possible during the inter-



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INDUSTRY CURRENTS

Biotech: Wear running shoes

Openings aren't plentiful, but jobholders love this fast-paced field

o you crave the fast pace and excitement of a start-up industry? Have you been pining for a chance to get quar hands on some new technologies? Are you more interested integrating systems than in sudding them? Do you scoff at coag outde? If you answered yes to all or most of these question, jotechnology may be a field worth looking at.

Odds of getting a job are tong simply because this is a field that hires information systems professionals in s on some new tech

on and mean et, because of an ind

Yet, because of an industrywide preference to buy rather than build applications software and the presence of a highly trained, computer-literate base of scien-tific end users, no skyrocketing increase in IS opportunities is an-ticinated. ic end users, no skyrocketing rease in IS opportunities is an-ignated. Genzyme Corp, in Cam-

bridge, Mass., displays the typi-cal no-fat, no-slack biotechnolo-gy profile. "We try to hire people who can pull double-duty," MIS manager Ed Charbonness savs-ctine thmanager Ed Charbonness says, citing the company's recent hir-ing of a combination net-

work/operations man work/operations manager.

"The more someone can bring
to the party, the better" is how
Bob Myers, vice president of information science at U.S. Bioscience, Inc. in West Constohochen,
Pa., sums up his hiring philoso-

IOTECH COMPAN-

The commentation in the commentation of the co

Personal computers form the acknown of IS operations at nost of these young firms. As a sult, biotechnology firms pri-narily look for candidates with stensive experience in PC hard-rare and applications and net-roriss. Although that a bad news

local-area and wide-area net-works as well as LAN-based

says. "Only 20% of our time is spent on new applications. The

panies still finical trials rough the Food and istration (FDA) ap-

toges of need to determine what kind of IS ex-ertise a biotechnology company seeds most, Genzyme's Charmeets most, Genryme's Char-bonneau says he advises job seek-ers to closely examine where the company stands in its overall re-search, development and approv-al cycle, which typically spans a

enfeld says. Nost of us feel like this is th best job we'll ever have, ew though we may not have it fore er," Blumenfeld says.

d in Ridley Park, Pa.











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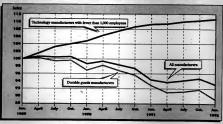
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"Every year, Hughes recruits somewhere between 250 and 300 new graduates. The nainstream of our hiring centers around stumoinstream or our ning centers around stu-dents with enjineering backgrounds. Gen-erally about 75% of our student recruits are in the electrical, mechanical, and computer engineering fields. Another 20% or so have scientific backgrounds, primarily in computer science and physics. The balance of our recruiting, then, is for MBA graduates with strong orientation in MIS or CIS. With one advertisement in Computerworld's Compus Edition, we get unique reach ta all three af our student oudiences.

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MARKETPLACE

Managing the human assets

BY MEL MANDELL

g decisions, says Al Walker, a tribre at Towers Perrin, a con-bancy specializing in salary di denefits administration. "Giant organizations budget ward of \$30 million a year for eir human resource depart-ents," says Walker, known as eather of HRS because of his sakering work at AT&T. "But the tright HRIS, the costs can cut in half."

nately for buyers, in arces software is a strong, established market with

ilestablished market with recthan 200 vendors. Traditionally, vendors have fo-sed on large, mainframe- and incomputer-based systems, imputer Associates Interna-tal, Inc., Dun & Bradstreet

tware, Integral, Genesys Soft-re Systems, Inc., Tesseract rp., Humanic Design Corp., woon and many others offer ducts in this area.

But downsizing has hit here, too. Many vendors now offer spe-

soc. Many vendors now offer specialized personal computer-based software, which they say costs less and is easier to install. Large HRIS products range from simple, one-module sys-tems that self for \$100,000 to mul-timodule, full-function packages that range in price from \$100,000 to \$500,000 pm more.

S500,000 or more.

Most big HRISs offer similar anctionality — they track comhunctionality — they track com-pensation, payroll, benefits, in-surance policies, career paths and employee history. Some puckages offer fast, ad hoc report generation, background batch

Products that permit easy em-loyee access to benefits information without an intermediary are becoming popular, ootably

formation. nford, Conn.-based Cad-overages, Inc., the world's third-largest supplier of soft

ponse, according to Robert Ru-ar, manager of HRIS. The estimated min

for voice response is \$100,000 for voice response m 5100000 and for touch-screen terminals it is \$125,000, he says. However, Cadbury first plans to port its HRIS from a remote IBM mainframe to a local-

Flexibility is key for many or-FIGURIALITY IS Key for many or-ganizations. Cargill, Inc., a Min-neapolis-based commodities dealer, for example, acquired so many companies that it needed a new system to cope with 500 dif-

rent health plans. According to Debbie Luddy. manager of the employee infor-mation center, the company chose Tesseract's HRMS Series because of its "flexibility to cope with diverse needs."

Despite the potential payoffs, users, consultants and even ven-cors say HRISs are not without some drawbacks. For starters, many companies may find large systems difficult and time-con-suring to install. In fact, one ven-dor estimates that 30% of compa-nies abandon their attempts to install HRISs.

However, Rupar says some of he hiame must go to buyers hemselves. Many customers un-

restimate the complexity of l-blown HRISs, he says, and nply don't assign enough re-urces to get these complex

lems or that lack tech sources can hire indep

consultants or vendors to do the work. Vendors, in turn, typically provide in-house consultants to implement their packages and tie

them to existing systems. Once the system is runoing, adapting a human resources department to the system can also be a challenge that drags out the process. David Bitcey, director of HRS at the Missiry of Government Services for the province of Ontario, begain assistant grant and the process of the province of Ontario, begain assistant grant gra

grown batch system.

After straining to adapt the package to the provincial organization, Ritesy and his 80-person staff "scaled back and adapted governmental procedures to the

Experience talks

gained is amazingly valu-able," says Miriam Ward, manager of the HRIS at an 800-bed Toledo, Ohio, hos-pital and president of the 12-year-old AHRSP.



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Sons reported operations, "Loung at the Composition of the Comp

it the company is "wee-positioners has na ema-servide appliers."
New product cycles are likely to boost the com-ory's bottom line, according to both analysis. For majes, Version 7, of Order's Flagships distabases in a residual for Digital Equipment Corp, WAS as a residual for the product of the company of a calendar year. Shikke me to fourth quarter of a calendar year, Shikke me to fourth quarter of the expects of the capacits Oracle shares to side for between \$14 and \$18 in the near term, such he said would put the stock at a very rich inceptannings valuation.

NEW OFFERING

Preserve de Seymour, Inc., a Charlotte, N.C.-based technology and systems integration provid-er of insuccial express firms, has feel with the Sc-erve of the second systems of the second systems of million commen shares, pricod between \$10 and \$12, on the Over the Counter market. Chip50ft, Inc. said it will offer 3.3 million shares for \$12.50 each. The Sam Diogo company makes personal computer-based tax preparation prelapses, including TurboTax. MakeinFax and

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Computerworld Friday Stock Ticker

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COMPUTER INDUSTRY

IBM irked at IRS deal

as For the second time, IBM is protesting the swarding of the Treasury Multisaer Acquisition Contract by the Internal Revenue Service to ATA'8. The IRS gave the \$1.4 billion contract ray representant of the IRS gave the Support to ATA'8. The IRS gave the IRS gave

prepared the best value overall when technical and other factors were weighed. IBM's bid was for \$708 million. Last week the U.S. General Accounting Office testified at a congressional hearing that the IRS could have avoided the protests had it done a hetter contract-

AT&T and telecommunications equipment vendor Network Equip ment Technologies, Inc. list week said they have signed a multiyear agreement to integrate public and private networks for multinational

a Dan Cerutti, an 11year veteran of IBM, joined Wang Laboratories, Inc. as vice president for open systems development. He is responsible for software development efforts for Wang's RISC series, which it resells from IBM.

in Policy Management Systems Corp. (PMSC) further cementod its position as the prime player in the insurancespecific software and services areas late month when Columbia S.C.-based PMSC signed up insurance glant Mutuand of Opushin Cost. as a locensee of its IBM Systems Application Architecture-based Series III. Lefe family of systems.

Factory automation plan nears completion

TI, DARPA join forces in program aimed at increasing U.S. competitiveness in semiconductors

BY JOANIE M. WEXLER

DALLAS — A five-year, \$100 million program designed to increase U.S. competitiveness in the semiconductor industry is

entering the homestretch.
Joint efforts among chip maker Texas Instruments, Inc. and two U.S. defense agencies an expected to spawn revved-ochip plants based on single-wafe processes, distributed computing and object orientation by lat

next year.

The team effort to hasten production turnaround time and gain real-time control of factory information in order to lower costs is expected to first be adopted by silicon makers and then spill over to other U.S. businesses that are struggling to

Rising interest

semiconductor industry, incluing an undisclosed major U.
automobile manufacturer, har expressed intentions to purchase the emerging real-time factory control system, according to project managers.

In e your program aims to see to standard for the next generaon of U.S. factories, they saidalled the Microelectronic Manfacturing Science and Technoigy-Computer Integrated Manfacturing (MMST-CIM) profacturing (MMST-CIM) profect, it is funded by TI, the
fefense Advanced Research
rojects Agency (DARPA) and

the Department of the A Rorce's Weight Laboratory. Sematech, Inc., a consortiu of 13 chip makers, is perticipa ing to help hone the new sen conductor factory to benefit i members, which include A vanood Micro Devices, Inc., I tel Corp., Motorola, Inc. and N

members, which include Advanced Micro Devices, Inc., Intel Corp., Motorola, Inc. and National Semiconductor Corp. Key project goals include a Unix-based real-time factory control system (see story below) and low-volume chip-making processes targeted at helping

The branch manager of the MMST-CM program. The project seeks to acceler ate chip-making cycle times us ing single-water processes — a opposed to traditional batel equipment — to quickly probase to wotumes of specialized chips. Single-water facilities address

ow volumes of specialized chips.
Single-water facilities address
the federal government's tendency to purchase low volumes
of specialized chips and the fact
that "there has been a rapid proliferation of variations in the miromoroceasor industry." said

r, Dean McCarron, vice president e of technology at In-Stat, Inc., a Scottadale, Ariz.-based consultancy that follows the chip mar-

The growing trend toward chip specialisation means "instead of making one product a milion times, you're making 10 products 100,000 times," which requires the low-volume production methods, McCarron ex-

Afferduable fubricantion
At a minimum, the project win
At a minimum, the project win
At a minimum, the project win
Deep American chy makers
business, according to Zachary J.
Lemnice, MMST-CMF program
manager at the DARPM technology office in Arington, W. He
said that today it costs between
S500 million and \$1 billion in
to bald a chip fabrication plant with
a life upon of about three year
and 18 months of profitability.

"Very few companies can afford that," so a goal is to build "Beoble manufacturing environments that allow a company to enter the state-of-the-art market at a low cost — less than \$30 million — and expand volume re-

mos said.
Without the streamlined ch
plant with its lower cost of entr
Lemmos said, the U.S. will he
a tough time maintaining
global edge in microprocesso
and signal processing. McCe

Simmering CIM

he real-time factory control system, which is being developed under the MMST-CMB program, is based on Units workstations. It uses object-oriented software to integrate manufacturing applications in a nonhierarchical fashion and eliminate data access bottlenecks, according to Jack L. Mahnifey, TTa branch manager of the

"Today, if a water fabrication manager saks for informat that typically results in a scurry of activity that requires lot people and several days to produce," explained Bob Doeri

The distributed control system would allow a manager at a workstation to point to one or more computers on the factors floor via a graphical user interface and pop up windows of information on how many waters are in process, what circuits are on the water, who the constrours in and other data.

A major goal is to compare production pains against action of determine glitches in real time so that procedures can be bitened as problems occur rather than merely being identified or the fact.

JOANIE M. V

No boost seen in U.S. share of Japan's semiconductor market

SHINGTON, D.C. —

No. 1 No. 1

In a bilateral agreemer reached last June, Jupan pledge to boost the foreign share of a semiconductor market for about 13% to 20% by the end 1992 [CW, June 10, 1991]. Hoever, according to figures r leased last week by U.S. Tra-Representative Carla A. Iti and the Japanese Ministry of I. ternational Trade and Industr uctor market force. They have also said the market share targets goals, not guarantees.

A 1986 U.S./Japan a



est contained the same 20 rget, to be met by July 3 91. That agreement large ded Japan's dumping of sen nductors in the U.S. bught the foreign share of J n's semiconductor mark

from 8.6% in 1966 to only 13.2% in 1991, with the U.S. owning a 12.3% share. One percentage point in worth \$209 million in annual sales, ac-

dustry Association.

Michael Gumport, senior vice president at Shear-son Lehman Brothers, Inc., said the U.S. was right to protest the apparational the said of th

TRENDS

turnover

Facing a 9% staff turnover rate during the last two years, CIOs note that when employees do leave, the primary motive is the usual — better pay

Experienced - Anticipated next live ye

Dismissals

Change of pace

Better salaries still lure employees to change jobs, while a career change, which was not a

son opeon, is morning up.			
Reason	New	Two years ago	
Higher salary	1	. 1	
More responsibility	2	2	
Changes in family	3	7	
Job content	4	3	
Career change	5	11	
1 — most comm	m 12-	cost consesses	

Training totals

arge percentage of fu allocated for training

(2.53%)

The economic luff hit the systems development group, which involves more than 40% of an overage IS staff. Of the developers who left in 1991, 15% were asked to go—compared with 6% in 1988.

Base: 430 CICs of large, for-profit, privates departments in the U.S. and Conado



NEXT WEEK

The approach of a unified European Community has droves of U.S. firms exploring business possibilities on the Continuous techniques. nent. However, major tech-nological and legal barri-ers await U.S. firms. Smart ers await U.S. firms. Smart IS managers such as Ber-nie Campbell at Sonoco Products are both acting and watching unfolding de-velopments. See next week's Executive Report.

ror Debite & Touche, Willes, Con-



S how us a software project fiasco, and we'll show you inadequate budget planning, unrealistic schedules and technology problems. However, software projects crash and burn for "soft" reasons as well — bad management and political maneuverings Next week's In Depth will present three case studies in which such soft factors did their insidious work.

INSIDE LINES

Lotus buys Nevell (concept)

▶ Look for Lotus and Nevel to join forces at Condex this week. Sources as yet annually tight-lipped due will reveal plan to jointy develop and market a Noten Net War Londsburghost to companies will such taboot mad, also be Modela. The two companies will such taboot mad, also week to be the control of the

No CASE for takeover

coupe of quarters. However, juspic cur makes BMW, lab's majority owner, "vants to baild a next-generatio company. . . through the soquistion of tools, methods and services," said Paul Hessinger, Softhb'a chief tech officer. Neither Hessinger nor Knowledge Ware official would verify the takeover offer.

Paris in springtime

The first fruits of the 4-mosth-old joint development; between Bild and Groupe Ball will start in type in early according to a source close to the Paris-based company, will make an amountement pertaining to RIC systems occure and. Observes speculated when the partnership disclosed in Jamany that EM would field Bull's multiprotectomology tion in RS(6000 line.

Armonk in springtime

I BM vill get its first shipment of portables from Zenith

BM vill get its first shipment of portables from Zenith

Data Systems, a Groupe Bull subsidiary, within 30 days, uccording to a Bull insider. The source said thet under Bull' a

provide 150,000 portable mentions go private to BMs, which

will relabel and resed them. Sources close to Zenith Buts any

them nucleus will probably combine the gate of the Zenith

Data Maintersport SL octobod ines with BM's black causing

BM. A. Zenith Data will not set the products it makes for

You call that multiprocessing?

While ISM does not believe in multiprocessing in the way most vendors mean multiprocessing. It is developing orders are that will take advantage of meaned system IMTS and that that will take advantage of meaned system IMTS and that concore says that, so to insultance orders and that concore says that, so we will be the order of the order order of the order orde

Big hat, multiple pro-

51g fax, Billitapse processors

T will join the multiprocessing market April 20 with a
Unit server that will use 33-MHz 68040 processors from Motorols. The company will offer two versions of the unchine,
one supporting up to seven processors, the other up to 16.

In response to DAD Software's claimal growth initiation, French Dadge Southered's Ediction across & Dadge, maked and French Dadge Southered's McCornact & Dadge, maked and marries had been designing with "maked by any simulated are the part of off-maintenance, CUIP EDBMS to Anadogs, Mala-tion and the part of the Control Control

Where are you haddo

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